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WE ask our readers to read once more the following extract from a correspondent's letter on competitions published in our issue for February 21, and then to turn to what other correspondents say in commendation of his scheme in another part of this issue: —

"The public is as human as anybody who is not in search of a design, and it resents any attempt to coerce it, particularly in matters of taste. Hitherto all attempts at effecting a better routine have been coercive in their nature, and it occurs to me that a change is more likely to be effected by persuasive measures than by steps compulsory. The only suggestion I can offer is one which would require much self-devotion to carry out,— but there may be something in it.

"Suppose an invitation containing the usual restrictive clauses and insulting stipulations which debar self-respecting architects from touching the thing to be issued to-morrow. The chances are good that the party signing the call would receive from a dozen 'well-known' architects remonstrances, homilies and essays pointing out the monstrosity of his presumption. Now instead of this, suppose a dozen or more well-known architects should band together and write to the offending party, saying, 'Dear sir, we, who are severally the architects of the following well-known structures, cannot take part in your competition under its present unprofessional conditions; but if you will modify them so that they shall read thus and so, we will all then take part, and do our best work for you to choose from. Consider whether it is not for your advantage to select from the work of twelve men like ourselves — to say nothing of all the others — than to have us and all like us, of attested ability, refrain from aiding you.' This is Quixotic, no doubt, but it would unquestionably be effective, and would not need to be continued many times. The public knows a good thing when it sees it, and just so soon as it is proved that their way is not the best for them, they will abandon it.

"There is of course no chance of such a scheme being carried out if it is to be left to the unsupported philanthropy of a few individuals, but if the profession at large will take it up and support these dozen or more 'well-known architects,' by each contributing a dollar or so, a fund could be easily raised each time which should, when divided among the twelve or more champions of reform, fairly reimburse them for the outlay of thought and time expended for the common good of professional advancement."

Next, we ask our readers to assist us in making the experiment on the lines indicated, as we believe it is worthy of a serious trial, and we invite the cordial and *immediate* co-operation of every architect in the country, and urge each reader, as he reaches the end of this paragraph, to write to assure us: —

First, that he will not take part in the competition for the Richmond City-Hall on the terms already announced.

Second, that if selected to be one of the ten "champions of reform," he will submit in competition for this building — the programme being acceptably reconstructed — a design worthy of execution, and his own high fame.

Third, that, being unsuccessful in winning the grand prize — the erection of the building — or one of the cash prizes offered by the Richmond authorities, he will consent to share with the other champions the fund which we propose to endeavor to raise for their partial remuneration; the balance they must accept in glory, and those milder emotions which in this life reward the self-sacrificing.

WE trust that each architect who gives adhesion to this scheme will help to assure its success by sending at the same time, one, two or more dollars to be held in trust by us till the competition is decided, and the entire fund to be divided equally between those of the ten champions who have not won one of the city's prizes. We feel that for such a purpose and in such a way it should not be difficult to raise a fund of two thousand dollars or more. To test such a scheme some one must put himself forward, and the modest part we propose to play is to collect and subsequently divide the fund; to select — with the best advice we can procure — the ten champions; to explain the workings of the scheme to the authorities at Richmond, and if possible, cause them to issue a new and acceptable programme, and in general to do all in our power to assure that the experiment shall have a fair trial. It is a necessity of the case that all this must be done at the same time — it would be too late to raise the fund after we had brought about a new programme, and *vice versa* — and as failure from one cause or another is possible it is only proper to assure contributors that in such case we will return to each the amount contributed, less postage — we are obliged to make that slight reservation, for in a case of this sort we have no right to employ our publishers' money.

TO many of us how familiar "On to Richmond" war-cry, but in what a different sense can it be used in this case where the mission of the invaders is not to destroy, but to beautify. We have selected the Richmond competition, not because the terms of the present programme are markedly worse than those of many another, but simply because it is the most promising opportunity that now offers for designing a noteworthy building, and because we believe the Richmond authorities are really striving to secure a good building. Another reason is that it offers to the Southern architect a chance of designing a building in what he once may have considered his political Mecca, while to the Northerner it suggests another opportunity of showing how thoroughly he is desirous of obliterating, be it in never so slight a particular, the relic and remembrance of that older time when our adopted war-cry was first used.

THE fashion of professional association, so happily set by the recent Convention at Chicago, is rapidly spreading among the Western architects; and a call has just been issued for a meeting of the architects of the State of Missouri, for the purpose of forming a State Association, which will be affiliated with the Western Association of Architects. The meeting is to be held at the rooms of the St. Louis Institute of Architects, in the Public School Library Building, in the City of St. Louis, March 27, next. The call is signed by eleven of the best-known architects in the State, and it is much to be hoped that the response will be general. One reason for hastening the movement in Missouri at this moment is that the next Convention of the Western Association of Architects is intended to be held in St. Louis next November, and it is particularly desirable that a well-organized local society should be ready to receive it. It is worth noticing that the Western States have been the first to earn the gratitude of the whole profession by initiating the formation of State Societies, as distinguished from the city and town associations. To our mind, the State organizations are likely in the future to exert a stronger and better influence than any of the larger or smaller ones. Occupying, as they do, the middle place between the local societies, whose action on points of professional importance is necessarily influenced to a great extent by personal and temporary considerations, and the national, or semi-national bodies, which meet but once a year, and can attend only to matters of very general interest, the State societies are most advantageously situated, both for regulating professional conduct, which they possess just the personal knowledge, and the impersonal character, for doing well; and for defending professional interests, in cases of competitions or the like, in which they can interfere freely, and with authority, where local organizations, composed of a few members, can rarely venture to take a decided position.

THE principal thing to be feared for the State associations is that the members will lose their interest in their work, through lack of opportunities for meeting and discussing what they have to do; and we trust that the officers of those already formed, as well as of the others which will, we hope, be formed in rapid succession hereafter, will pay particular attention to this point. It is practically impossible, even in a country where travelling is so general as in our West, to obtain at short intervals anything like a general representation of the members of a society covering a whole State; and yet some sort of general participation in all the proceedings of the society is necessary not only to its influence, but to its continued existence. To find means for maintaining frequent communication among the members of such a society, without requiring too often their personal attendance at meetings, is a matter which depends mainly on the President and Secretary. Particularly is it desirable that the latter should, by the fulness and discrimination of his reports of meetings, and the punctuality with which they are forwarded to members, keep these informed of what goes on in their society, and, if possible, secure their participation, by correspondence, if not by actual presence. Among some of the professional societies abroad the vote of each member is taken on all questions of interest to the society by correspondence, a short printed statement of the proposed measure being forwarded to each by mail, with a coupon for his vote, to be detached and returned in the same manner. If the long-promised return-postal cards ever come really into use here, they will furnish an excellent means for conducting the proceedings of societies in this way, one-half of the card describing the matter under discussion, and the other having the Secretary's address printed on the face, leaving the back blank, so that the member may write his vote or opinion with the least possible trouble, and drop the card in the nearest mailing box.

A BAND-SAW for cutting marble is described in *Le Génie Civil*, which certainly merits mention. Every one knows that the saws ordinarily used for cutting marble or hard stone, which consist of plain steel blades, fed with sand, lose much of their efficiency by the filling of the cut with a paste of finely ground sand and stone, so that there is a certain advantage in working with a vertical saw, which does not accumulate pulverized stone beneath it. The difficulty in employing a toothed saw-blade lies, however, in the rapid wearing of the teeth, by which the blade is soon reduced to a smooth ribbon of steel. To prevent this, the new saw is provided with an accessory in the shape of a grooved wheel of hardened steel, which is set at right angles with the saw-blade, and engages with the teeth of the saw. This grooved wheel is made to press so firmly against the blade as to notch it, thereby reviving the teeth as fast as they are worn down. The teeth are of course rather rudely formed, and are left with a large "burr," but this seems to help the cutting action, by making more room for the blade in the cut. In practice this saw is operated at a very high velocity; and although we have no statement of its efficiency, it seems quite possible that it will be useful.

A GOOD deal of curiosity has been excited by the project for adding interest to the Paris Exposition of 1889 by the erection of a tower a thousand feet high. Perhaps the idea was suggested by the completion of the Washington Monument, now the highest building in the world, but, as a high tower is a very common ornament of fair grounds and seaside resorts, the Parisians may have had nothing more in mind than to raise a lookout tower suited to the magnitude of their present enterprise. The first essay at designing the thousand-foot structure was made by M. Eiffel, a distinguished engineer and contractor, the designer of the famous bridges over the Douro in Portugal and the Theiss at Szegedin, besides several other viaducts and engineering structures. M. Eiffel's tower, illustrated in our issue of two weeks ago, is intended to be all of iron and to contain several stories of large glass-roofed rooms to be used for various purposes. In emulation of his example, M. Bourdais, the architect of the Palace of the Trocadéro, has now prepared a plan for a tower of the same height, but designed to be built of what he calls "good old stone," in distinction from perishable metal. It cannot be denied that M. Eiffel's iron lookout has an air not altogether architectural, and M. Bourdais's design will probably prove to be much more monumental, but the advantage in point of stability may be with the former. M. Bourdais's plan, however, would be less costly in execution than the other. Leaving out of account the expense of the land, he estimates the cost of the stone tower, which would contain fourteen thousand cubic metres of granite, at five hundred and sixty thousand dollars; while the iron tower is estimated at six hundred and eighty thousand. If the cost of the land covered by the structure is included, the iron tower would be much the more expensive of the two, as its spreading base would occupy two acres and a half, or more than two million dollars' worth of land, at the present prices of land in the region of the Champs Elysées, while the granite monument need take only thirty-two hundred square feet, worth, at the same rate, about sixty thousand dollars. As M. Bourdais's tower is so small in horizontal section, there can be no great halls in it; but the rooms in the lower stories may be utilized for some purpose in connection with the Exhibition, and the upper floors will give space for eighty rooms, to be rented to invalids who need "air-treatment." The top is intended to be devoted to a huge electric lamp, having a power equal to two million argand gas-burners, which will, it is thought, give ample light for reading six or eight miles away, and will illuminate the streets of the city in a very effective manner. The inner portion of the tower is to be left unoccupied, forming an uninterrupted shaft a thousand feet high from the ground; and a well a thousand feet deep is to be sunk beneath it, so as to give a vertical shaft two thousand feet from top to bottom. This, it is supposed, will be useful for certain scientific experiments.

THE scheme for making a tunnel under the East River, from New York to the Long Island Shore, has advanced another step, and a company has been incorporated under the name of the "East River Tunnel Railroad Company," with a nominal capital of two million dollars, for carrying it out. The total length of the proposed tunnel is about thirty-five hundred feet, more than half of which is included in the shore ends and the portion under Blackwell's Island, which lies about in the middle of the route. By sinking shafts on each side of the island, as well as at the shore ends, the tunnel can be carried on from eight headings at once, and a great deal of time saved; while the four shafts, nearly at equal intervals, will serve to ventilate the excavation. Although the formation through which the tunnel must pass is entirely composed of gneiss rock, the cost of the work is estimated at one-fifth that of such a bridge as has been proposed for the same line, and the cost of maintenance will be much less than with a bridge. Whether the necessities of traffic between Long Island and New York are such as to require such a tunnel, in addition to the present suspension bridge, may be doubted, particularly in view of the fact that the infinitely greater traffic between New York and the New Jersey shore, which possesses now not even the convenience of a bridge, has not seemed to capitalists to warrant the completion of the tunnel already almost half built under the Hudson River; but that is a matter for the stock-holders in the new company to decide.

THE *Sanitary World* relates that the Midland Railway Company, about as matter-of-fact and unsentimental a corporation as exists in the world, recently employed a wizard, or diviner, or whatever he may be called, to point out, by means of a hazel twig, the proper spots for sinking wells to obtain water for their wagon-building establishment near Peterborough. There was a well on their ground, but it yielded only half the quantity required, and two more wells were sunk, without supernatural assistance, which yielded no water at all. Rather than go to the expense of bringing water a long distance in pipes, the company resolved to secure the services of a resident magician, and he was brought to the ground, with his forked witch-hazel twig. His mode of using this instrument, as described in the account, was the same as that followed here. Holding the twig in both hands by the forked portion, he walked about the grounds for some time, until at last the twig was observed to bend slowly downward and point to the earth. Noting the spot thus indicated, the wizard continued his march, until he came to a place where the twig was suddenly attracted with such violence toward the earth that it broke in his hands. At this point, and also at the one first found, wells were then sunk, and an inexhaustible supply of water found. The account goes on to suggest that the services of a person so supernaturally gifted might be of great importance in the African deserts, where, although the ground water-line seems to be at no great distance from the surface, the visible springs are situated in some cases five or six days' journey apart.

STATUES AND MONUMENTS OF LONDON.[1] — V.

George Canning, Westminster Abbey. Chantry, Sculptor.

THE last group consists of single statues and busts. Chantrey, 1782–1842, was the first to abandon altogether the allegorical compositions, and to content himself with single figures. I have already alluded to his statues in the open air. In the Abbey we have numerous examples of his work — the statues of George Canning, of Sir John Malcolm, of James Watt the engineer, of Horner, and others. There is always merit about them, there is never anything to offend. The likenesses are good, there is dignity and good taste; but, on the other hand, there is an absence of the highest qualities, and a certain commonplace air amounting to insipidity. Compare his George Canning, one of his best, with the statue of Canning's great son, Earl Canning, by Foley, standing next to it in the North Transept; both are evidently likenesses, both have dignity, but there is a something in Foley's which makes all the difference between a work of genius and the work of a highly cultivated artist without the sacred fire.

After Chantrey come Gibson, Foley and Stevens. The only statue by Gibson in the Abbey is that of Sir Robert Peel [see Illustrations], represented in a Roman costume, very inappropriate to the subject. The statue is anything but a success. It is said that Gibson refused to undertake the work unless he was permitted to represent the statesman in a toga. There is also the beautiful statue of the Queen by Gibson, with the figures of Justice and Mercy, in the Robing-Room behind the throne in the House of Lords.

Of Foley we have but a single work in the Abbey, the statue of Lord Canning already alluded to. In St. Stephen's Hall, the gallery leading to the central hall of the Houses of Parliament, there are the statues of Selden [see Illustrations] and Hampden by this artist, works of great merit. His best works, however, are at Dublin and Calcutta, and it is greatly to be regretted that Foley was not more in request for statues in London, for his work was of the highest order, uniting the rare quality of imagination with delicacy of treatment and purity of style. Of Stevens we have also a single work at St. Paul's, the magnificent monument of the Duke of Wellington, a recumbent figure with a lofty canopy, adorned with groups of allegorical figures. It is in the purest Italian style, and there has been nothing equal to it in this country since Torregiano. This closes the list of sculptors it is necessary to refer to without dealing with the works of living artists. It is not pretended that this short summary is either exhaustive or complete. There are many excellent works which have not been alluded to. There is, for instance, a noble bust of Sir T. Richardson, 1635, the jeering chief justice of Charles the First, by Hubert Le Sueur; there is the statue of Lady Walpole by Valori, 1737, suggested by the well-known figure of Modesty at Rome; there is the monument of Townsend, 1737, by Eckstein, 1757, representing a sarcophagus borne on backs of two Indians, a work of great beauty; there is the monument to the unfortunate Major André [see Illustrations]; an excellent statue of Wilberforce [see Illustrations] by Joseph; and many others could be mentioned. It has not been intended, however, to do more than suggest the succession of works which are to be found in the Abbey and St. Paul's.

James Watt, Westminster Abbey. Chantrey, Sculptor.

Of the monuments thus referred to in the Abbey, many are little seen, or are seen to great disadvantage owing to its crowded state. The most pleasing monument in the building, that of Vere, is hidden behind the gigantic monument of Wolfe, in the aisle of the North Transept, whose entrance from the aisle of the choir it completely blocks up; and the Vere monument itself shuts out from view to a great extent the monument to Sir George Holles, which is also one of the most interesting in the building. It would be the greatest improvement if the monument to Wolfe could be moved so as to open up the aisle and enable the Vere monument to be brought forward. This would at once improve the architectural effect of that part of the Abbey and bring into view both the Vere and Holles monuments. That of Wolfe is valuable from its associations, and should on no account be removed from the Abbey. Again, the intrusion of the gigantic monument to Watt, in the chapel of St. Paul's, among so many monuments of the Elizabethan era, and where it is so incongruous, is an outrage on good taste. The monument to Craggs, an extremely interesting one, is hidden away in a dark corner at the end of the nave, behind the colossal monument of Cornwallis. Many illustrations of the same kind could be given, where by judicious removals other monuments of great interest could be brought into the prominence they deserve. The fact is that the available space in the Abbey is too small for what already exists there, and it is certain that in the future monuments must either be reduced to the smallest busts, to be stuck up wherever a vacant corner can be found, and irrespective of their surroundings, as is now too often the case, or the demand for this national recognition must be refused altogether.

Monument to the Duke of Wellington, St. Paul's. Alfred Stevens, Sculptor.

On the other hand, it would be a most serious misfortune that a break should be made in the continuity of this splendid roll of monuments to the great and illustrious men of the Empire, or in the gallery of monumental sculpture, in which so far all that are eminent in that line of art have hitherto been represented. The subject is one which has long occupied the attention of those most interested in the Abbey. It was one in which Dean Stanley felt the deepest concern. He felt, as all have done who are cognizant of the facts, and who appreciate the Abbey in its various functions, that an effort must be made to extend its limits and to give greater space for monuments, if not for burials, in the future. Of the burials in the Abbey much might here be said. If it be advisable to continue them at all at Westminster, it is certainly most desirable that they should no longer be carried out within the Abbey proper, and that another and more fitting place should be found for them.

It is in this view that a proposal made by Sir Gilbert Scott found favor. I have already alluded to it in a former article on "London Improvements" in this Review.[2] The proposal of Scott was to build a cloister, or rather a monumental chapel, to the north-east of the Abbey, along the line of the houses in Old Palace Yard and Abingdon Street, and communicating by a covered passage passing under the buttresses of the Chapter House. The proposal would involve the demolition of all the houses in Old Palace Yard and in Abingdon Street as far as Great College Street, and the purchase of this property would cost about £200,000, a very large sum to expend in demolition.

For my own part I think that Scott's plan is open to some objection. The frontage of the chapel or cloister which he proposes would

[1] A paper by Mr. G. Shaw Lefevre, reprinted, with added illustrations, from the *Nineteenth Century*. Continued from page 101, No. 479.

[2] "London Improvements," *Nineteenth Century*, November, 1882.

extend eastward beyond the extreme end of the Chapel of Henry the Seventh, and the interesting old Jewel Tower, at the back of Old Palace Yard would again be hidden behind it. I incline to think that any addition to the Abbey in this quarter should not extend beyond the east end of Henry the Seventh's Chapel. This would bring it into a line with the Jewel Tower. A monumental chapel might be constructed in conformity with this view on the site of the houses on the east side of the Little Cloisters, and united to the Abbey in the manner proposed by Scott. This would involve the demolition of the houses in Old Palace Yard only, at a cost of about £80,000.

Supposing the chapel to cost about £50,000, the total sum required would be £130,000. Of this the main portion, it seems to me, should be subscribed by the public, if some wealthy benefactor could not be found to undertake it; and upon this condition, and speaking unofficially, I cannot but think there would be a strong claim for assistance to so great a cause, national, metropolitan and ecclesiastical, upon the three bodies who represent these interests, Parliament, the Metropolitan Board, or whatever body may represent the whole metropolis, and the Ecclesiastical Commission, in which body the estates of the Chapter of Westminster, now producing an immense revenue, are vested. It is then in a joint operation between the public, in its capacity of subscribers to a great and necessary and beautiful work, and the three bodies I have named, that the ultimate solution of this difficulty may be looked for.

C. J. Fox, St. Stephen's Hall, Westminster Palace.

Lastly, it is to be observed that such a plan, involving as it would the clearing away of the houses in Old Palace Yard and Poets' Corner, would be one of the most splendid improvements that could be carried out in this part of London. It would open out the south side of the Abbey, and disclose to view the beautiful Chapter House, now almost completely hidden. It is not many years since the north front of the Abbey, or a great part of it, was similarly hidden from view; old prints show that there was a row of buildings on either side of St. Margaret's Church, opposite to the old Law Courts, from Bridge Street to the Abbey. In fact the greater part of Parliament Square was covered with houses. These have all been demolished, and the Square has been completely cleared within the last thirty years. The Abbey now stands out in all its beauty on this side. The removal of the old Law Courts, and the opening to view of Westminster Hall, effected during the past year, has been another improvement of the same kind.

It is not too much to say that the panorama of buildings now seen from a point at the end of Great George Street, near to the statue of Peel, is one of the finest in Europe. On the extreme right stand the towers of the Abbey, then the whole range of its nave, transept, and Henry the Seventh's Chapel, against which St. Margaret's Church stands, not without advantage in breaking this long line, in supplying another tower, and in giving the means of appreciating the size of the Abbey. The Victoria Tower is then seen in full, down to its base, which was formerly scarcely visible from any point; then comes Westminster Hall, with its ancient buttresses, the contrast of whose simplicity and grandeur with the ornate frontage of the new palace, and with Henry the Seventh's Chapel, is very striking and not ungrateful to the eye. The picture ends on the extreme left with the graceful Clock Tower. What can be more beautiful or more full of interest than this range of buildings!

Parliament Square will be further improved when the street leading to it is widened uniformly with Whitehall, as is now proposed, and when a handsome block of buildings is erected along the new line with a frontage to the Square.

Little will then remain to be done in this quarter except to open out the view of the Abbey on its south side. The proposed monumental chapel, the Chapter House and the Abbey will then stand opposite to Barry's beautiful front of the House of Lords, and the Victoria Tower, and the "place" on this side of the Abbey will be not less striking than that on the other side.

When the wealthy people of London rise to a conception of the dignity and beauty of the great city in which they live, and from whence many of them derive their great incomes, and of their duties as citizens, so far better understood and acted upon in other great cities, it is certain that this improvement will be one of the first which will be accomplished. The Abbey, with its wealth of monuments, the Hall, and the Parliament House of Westminster will then form a group worthy of this, the *μεσόμφαλος* of the British Empire.

The World does Move. — The trustees of the British Museum have decided by a small majority in favor of Sunday opening.

THE DELLA ROBBIAS. — I.

"The Madonna a la Pomme." An enamelled Terra-Cotta by Luca Della Robbia.
(From *L'Art.*)

THERE are few sculptors whose names are more familiar to the popular ear than is Luca Della Robbia's. And the average tourist will tell you, I think, that the work of no artist whatsoever is better known to him; its individuality more clearly perceived, the effect it produced more distinctly recollected. Yet it is true none the less that there are few great artists to whom fuller justice has not been done. There are few who have been so carelessly studied, few whose best work is so ignored in favor of work that is less good, few whose reputation rests on such superficial grounds. Luca is popularly known, not in the essence of his art, but merely as the inventor of a novel, striking, and attractive technical process. Not the intrinsic character of his sculpture, but the fact that most of it is executed in enamelled colored terra-cotta is what the world at large remembers. I do not know whether to call him fortunate or unfortunate in this invention. Its results have a peculiar charm, and especially, a peculiar utility of their own. Their durability fitted them well for exterior architectural decoration, and to this they brought a note of clear pure color not otherwise to be obtained in combination with admirable form, and with the relief which gives admirable light and shade. And their polochromy fitted them no less for almost pictorially decorative uses within both church and palace. If we consider the legacy of the Della Robbia family as a whole, and remember what a unique, yet lavish and varied gift it was, we cannot regret that Luca left bronze and marble, and turned to clay instead.

But his own art suffered from the exchange. In any state clay is a less delightful material than the others. And when it is burned and enamelled, the very quality which makes it so useful and so tempting — the brilliant hardness of its surface — joins with the conditions of its making to put its results, considered as pure art below the results of bronze and marble. We see this very clearly when we contrast Luca's earlier works in these materials with even the best among his terra-cottas. Yet these are so much more "striking," so much more conspicuous in the sum of Renaissance sculpture, that the others are half-forgotten by the world in its estimating of his art. This would matter far less, however, were no terra-cottas called his, but those which are his own. But a peculiar confusion has been the result of peculiar circumstances. Luca was only one of many sculptors who made enamelled statues and reliefs; yet the process by which enamelled colors could be successfully applied to such broad and varied surfaces was for long a secret. For very many years it was exercised only in ateliers directed by men who bore Luca's name, who were inspired by his ideals, and whose results kept a strong family likeness to his own. All the other Della Robbias were his inferiors, yet even the connoisseur is often puzzled to decide what works are his and what are theirs, and the superficial eye can hardly understand that there is any difference between them. In Italy every enamelled terra-cotta is, popularly, a Della Robbia, and every Della Robbia is a Luca. Even when there is evidence to the contrary, no one cares to cite it. Who wants to remember, for example, that the famous *bambini* on the Hospital of the Innocents in Florence are children not of Luca but of Andrea? And how often have we not heard Luca named even in connection with the great frieze at Pistoja; a work which has absolutely no affinity with the subject-matter or with the spirit of his art?

It is always thus with artists who have forcibly impressed "a school;" but it is thus with Luca, I should say, much more conspicuously than with any other. For his school for long kept peculiarly close to his mood and manner, used a process not employed by others, and was not merely a school, but a *family* too. Had he employed only stone and bronze he would hardly have been so closely copied, or so long repeated. His popularity would have been diminished by the fact, and by the substitution of a usual for a strikingly unique

material. The world would not know his name any better than it knows the name of a still greater sculptor — of Donatello; would most probably not know it any better than that of Della Quercia or of Mina da Fiesole. But his work would all have been of his very best, and when his name *was* mentioned, it would always have been as that of a great sculptor, not, as too commonly to-day, though most unjustly even when his terra-cottas are in question, as that of a clever decorator, a skilful, pleasing artist of a kind below the best. A great sculptor he was indeed, few greater even in the race to which he belonged, the greatest race of sculptors that has lived since the Greek. We will not speak of Michael Angelo; there is no term of comparison between him and any other. But we may compare Luca with all the rest of Italy, and be rational in the act. He was not so noble as Ghiberti, for example, not so superb as Andrea Sansovino, not so strong as Donatello; but he is more charming, more lovable than either. Perhaps, too, he is not to be called as "original" as was Ghiberti in his idealism; as was Donatello in his realism; but he was extremely original in the way he combined these two qualities. In his exquisite poise between their two extremes — a poise which is not cold neutrality, but a vital hold on either side — he is as individual as any of his fellows. None has a more distinct personality, or a personality that would leave a much more deplorable blank were it absent from the marvellous company of Renaissance sculptors. Does the world which "knows" him so well quite realize all this? Has he not paid perhaps too great a price for his somewhat shallow popularity, and for the gratitude he gets as the Creator of a distinct *genre* in sculptured work?

Fortunately the critics are beginning to tell the world of what he was. In 1855, already, M. Barbet de Jouy wrote a good book about the family; and two years earlier, M. Delaborde, while considering specially the latest Della Robbias, in his "*Château de Bois de Boulogne*," had given an admirable introductory sketch of their great ancestor. In 1878, again, Herr Bode published a large volume of the studious German sort, entitled "*Die Kunstler Familie Della Robbia.*"

But there was still great need of another work which should have a more popular interest, and should unite thorough historical research with keen artistic criticism. This work we have now in the shape of a fully illustrated quarto, "*Les Della Robbia*," written by M. Emile Molinier, one of the *conservateurs* of the Louvre collections, and M. J. Cavalucci, Professor in the Fine-Arts Academy at Florence. Previous studies have largely been put under contribution but many unedited documents have also been consulted, and some of them are reproduced in the appendix. Not the least merit of the volume is a long *catalogue raisonné*, wherein hundreds of works attributed to the family are clearly described, and so far as possible are attributed to their real creators. The many wood-cuts are not of such excellence as we in America should demand; but they are assisted by a few sympathetic etchings, and make up in number for what they lack in individual perfection. They give the reader a good idea, if not of the quality, at least of the general character of the art discussed. They will help him to know a Luca or an Andrea when he sees it, though they will not suggest a tithe of the beauty he will find in either.

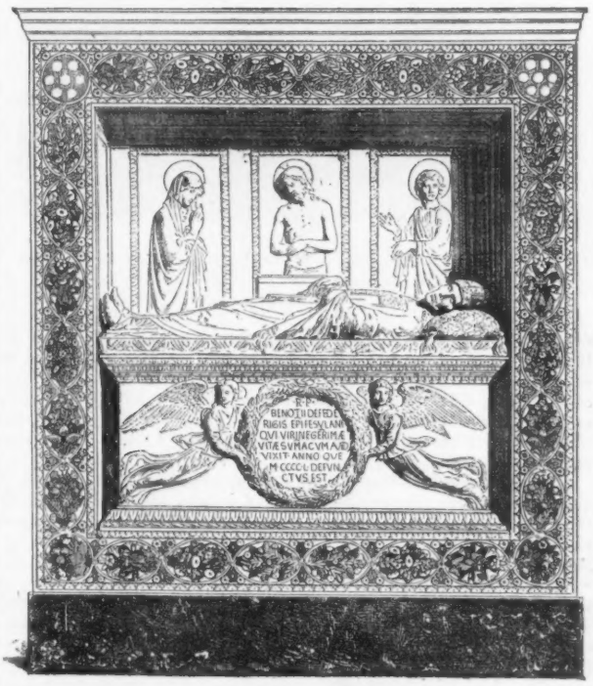
The way is long and varied from the first Della Robbia to the last. Between the organ-gallery in Florence, and the statue of Catherine de Medici in Paris there stretches almost a century and a half. I will try to tell the tale as briefly as I can. At first I wanted to make it a mere review of the book last named; but with a subject so suggestive and seductive one is loth to follow very closely even so good a guide. It will be my authority, however, in regard to facts of every kind.

Luca Della Robbia was born in Florence, as appears from an authentic document, some twelve years later than Vasari says, in 1399 or 1400. Like so many contemporary artists he was apprenticed to a goldsmith, but soon exchanged his craft for work in bronze and marble. And — again like so many others — his youthful industry seems to have been prodigious. Many of Vasari's anecdotes must be abandoned, and with them, perhaps, the statement of Baldinucci, that he studied with Ghiberti. His work certainly exhibits traces of Ghiberti's influence, but not more strongly than of Donatello's. It is probable that in his early years he travelled, but dates and destinations are alike uncertain. He never married, was intensely devoted to his art, and almost equally so to the education of his nephews, especially of Andrea who was to be the inheritor of his talent, the participator in his fame. One realizes the great contrasts of Renaissance life, when one compares, for instance, the story of Benvenuto Cellini with the story, if so it can be called, of Luca Della Robbia. Luca has indeed no history save the history of his work. Until his death in 1482, he led with his nephews in a little house on the Via Guelfa, a uniform, peaceful almost austere existence. As our authors say, his character is undoubtedly reflected very faithfully in the character of his art; and we may thence affirm that no man can have been more serene, more tender, more cheerful or more pure. In a very prosaic place, in his last testament, we find an almost poetic touch that helps to paint the household for us. It is well known that Andrea, as but natural, was his best-beloved. Yet to Simone, Andrea's brother, he leaves all his worldly goods, and to Andrea only, *he* does not say "only," his fame and the art which he had taught him. We must needs rank Andrea a space below his uncle as an artist; yet how rare a chance it was that such a fame should find so true a guardian, such an art so good a pupil. It was not in truth an art of his own that Andrea practised; it was the sequel of his uncle's merely. And, be it noted, if no one's work *but* Andrea's had been confounded with that of the great master, there would be far less to complain of than there is to-day.

Luca's reputation was very great with his contemporaries; Vasari tells this plainly, and it is still more plainly told by the fact that in 1471, he was obliged by his age and his infirmities to decline the greatest honor in the power of his fellow-craftsmen to bestow, the presidency of the Corporation of Florentine Artists.

He was thirty years old when Florence first gave him an important work to do, though he had doubtless already labored with a score of others on the exterior of the cathedral. This work, his masterpiece, I should say, considering execution and conception both, was a tribune for the organ in the cathedral. Its ten marble reliefs, representing chilren and symbolizing "Music" are now — together with a corresponding series, wrought by Donatello for the other tribune — in the Bargello Museum in Florence. We may regret on principle that they are not placed in their true position; yet we gain by the possibility of close inspection.

In 1447, these reliefs being still unfinished, Luca received another important commission, to complete the sculptures on the Campanile begun by Giotto and Andrea Pisano. Three years later both undertakings had been accomplished. A charming work, dating from 1442, is a tabernacle, built for the Chapel of St. Luke in the Hospital of Santa Maria Nuova, but now in the Church of Santa Maria at Peretola. It is a rich little architectural structure of marble with a *Pietà* in its pediment; but its frieze is ornamented with heads of cherubim wrought in white enamelled clay. A similar combination of materials—the enamel being in this case colored—is to be seen in the tomb of Benozzi Federhigi, Bishop of Fiesole, which also has



Tomb of Benozzo Federighi, Bishop of Fiesole, by Luca Della Robbia, in the Church of S. Francesco di Paola near Florence.

(From *L'Art.*)

been moved from its original station, has been taken from Fiesole to the Church of San Francesco di Paola near Bellosguardo. Sumptuous architectural sepulchres were among the most frequent works of the Renaissance. Many others have been attributed to Luca, but with regard to only one other can we be quite sure, and this, cited by Vasari, has unfortunately perished.

Among Luca's works in bronze the chief still survives, the door to the sacristy of the Florentine Cathedral which he began in collaboration with Michelozzo and Masaccio but completed by himself, after having had it in hand no less than thirty years.

Vasari tells us that Luca was discouraged at the slowness of his processes, and the consequent paucity of his rewards; that he perceived the greater facility with which clay might be fashioned, and set himself, therefore, to the discovery of some coating by means of which it might be made as durable as stone. (One is tempted to believe, rather, that it was the desire for *color* which prompted his investigations, or more exactly, the desire to *combine* color and durability). After many essays, Vasari adds, he did in truth "discover" an impervious enamel, and by its "invention" won great renown. From these words many have inferred that Luca was literally the first in Italy to use stanniferous enamel in any way, and thus the real parent of all the Italian majolicas. But a reference to the pages of Messrs. Molinier and Cavalucci, or indeed, of any one who has written the history of majolica, will reveal documentary evidence enough

to prove that enamelled faïence had long been known in the peninsula; probably for more than two centuries ere Luca worked with it. Nor was he by any means the first to use terra-cotta for architectural

"The Resurrection." An enamelled Terra-Cotta by Luca Della Robbia, in the Tympanum of the Door of the Sacristy of the Cathedral, Florence.

(From *L'Art.*)

decoration; nor again, to color statues; this had been done all through the Middle Ages, and in the ancient world as well. Yet he was a real discoverer and inventor in another way; in his *combination* of these different practices. He was the first to *apply color by means of enamel to sculpture in relief and this to monumental decoration.* Such is the sum of his originality, and I think it is great enough.

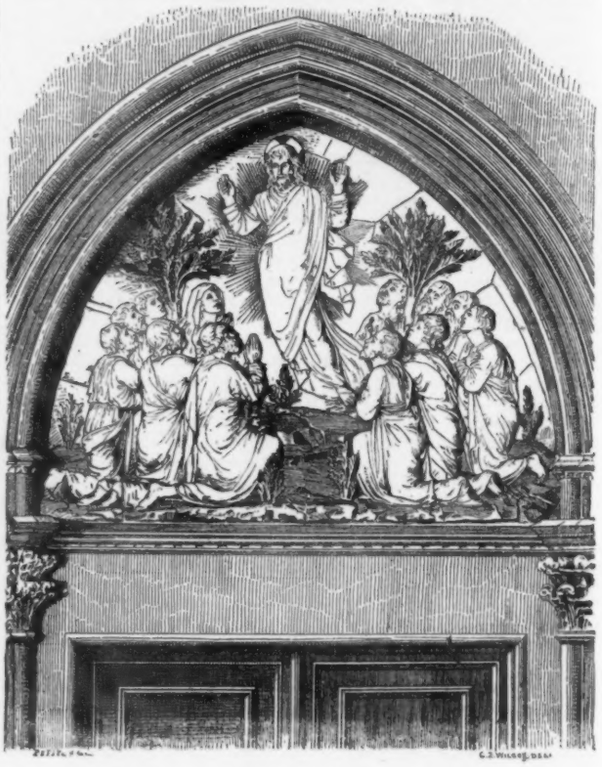
It is a common idea that at first Luca used only blue and white in his enamels. He always used them, of course, much more largely than any other colors; but from the very beginning seems to have introduced other tints in carrying out his details. We find, for example, green, violet and yellow in the tympanum representing the "Resurrection" which he placed in 1443 above the entrance for which his bronze door was wrought. And this is his earliest *dated* work, though probably not his first attempt since the new and difficult technical process is already perfect. Next among dated examples comes the corresponding tympanum over the other door of the sacristy, which represents the "Ascension." Here again we find all the colors I have named, and brown besides. We find them all, no less, in the cupola of the chapel of the Pazzi family in Santa Croce, which is evidently one of his earlier works, and certainly one of his finest essays in decoration.

Another common belief that Luca very often used white enamel without any color; is also questioned by our authors, who think that it was very exceptional for him to omit color, and attribute almost all the many existing white "Della Robbias" to a time as late as the sixteenth century; to the weakest period of the school.

Vasari speaks of two beautiful nude angels of gilded bronze, which Luca wrought "in the round," and placed above his organ-gallery in the cathedral; but they have disappeared, and the only detached figures we know of his are terra-cottas, the two kneeling angels with candelabra in the sacristy. They are far superior to the many analogous statues produced by his successors, yet they do not take their place among the very best of his creations.

Two of Luca's beautiful medallions on the outside of 'Or San Michele in Florence — the two which represent armorial bearings — are not in relief, are merely colored flat, and are therefore properly to be called majolicas. Similar works have been attributed to him in great numbers, but the authenticity of almost all is very doubtful. Conspicuous among them are the twelve large circular plaques, which the authorities of the South Kensington Museum believe were part of the ceiling of a room in the Medici Palace. Such a room, we know, was decorated throughout by Luca, even to its flooring; and in the work he used enamels both flat and in relief. But, as our authors say, there is no evidence, either internal or external, to prove that these illustrations of the "months" were ever part of it. And I may add that their beauty is not so very great that we need wish to insist on Luca's authorship.

Certain terra-cottas that are *not* enamelled and that yet apparently



"The Ascension." An enamelled Terra-Cotta by Luca Della Robbia, in the Tympanum of a Door of the Sacristy of the Cathedral, Florence.

(From *L'Art.*)

are Luca's were, most likely, studies or models for his other works. There is one in the Berlin Museum for instance, which must have served in the execution of his bronze door.

I cannot here repeat even the short list of terra-cottas, which may with certainty or with good likelihood be given Luca's name — I can only cite one or two of the most important. One of his finest tympana crowns a door on the Via dell' Agnolo in Florence, and shows the Virgin and child between lily-bearing angels. Very remarkable, too, and in a very different way — is the vault of the Chapel of the

Plaque in the South Kensington Museum attributed to Luca Della Robbia.

(From *L'Art.*)

Cardinal of Portugal in San Miniato. It is entirely faced with colored enamels, a checquered surface of yellow, green and black, forming the background for five great blue and white medallions in relief. The central one bears the Holy Dove surrounded by gilded rays; the rest, half-figures of young angels symbolic of the cardinal virtues. These last reveal perhaps a stronger idealism than any of Luca's

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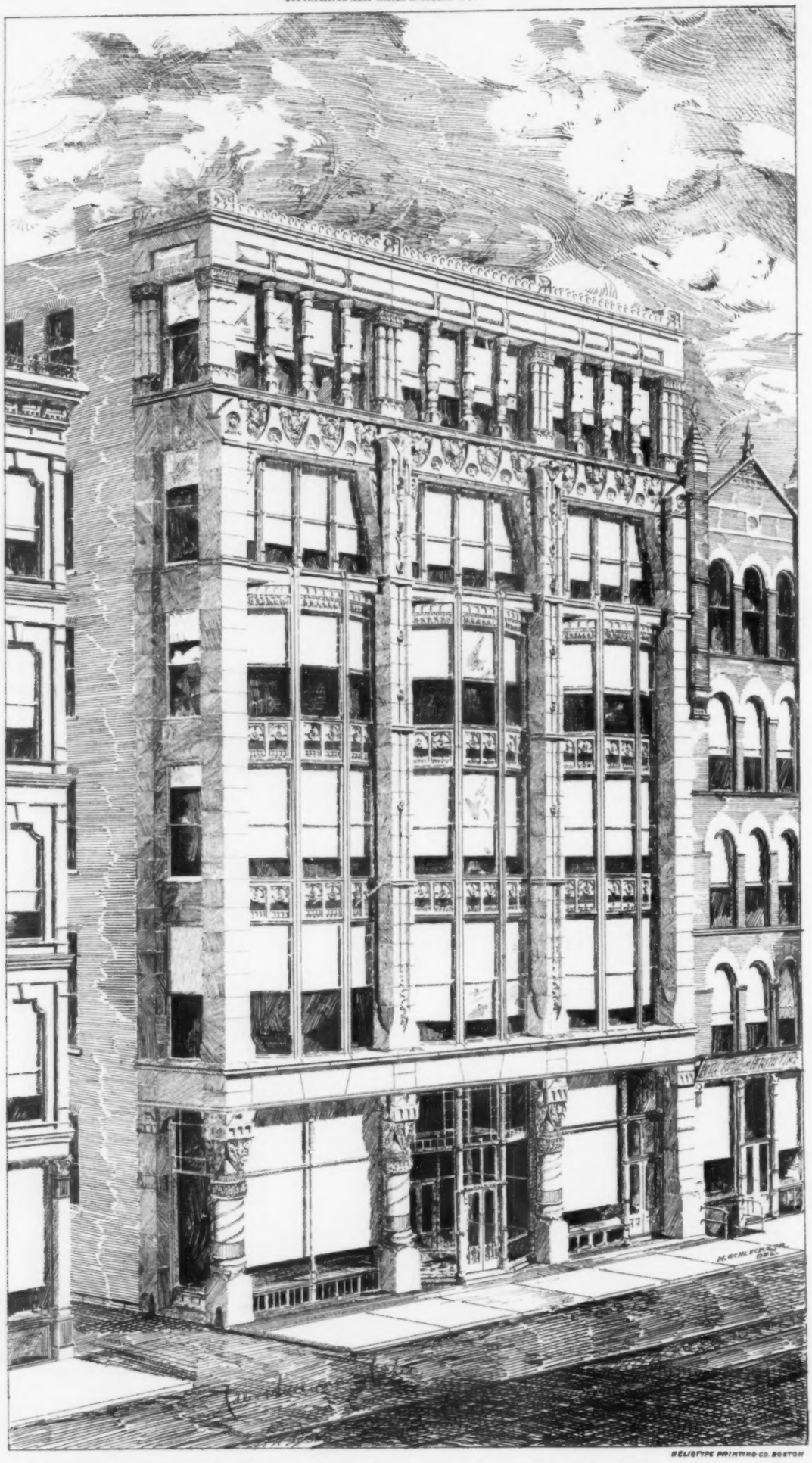

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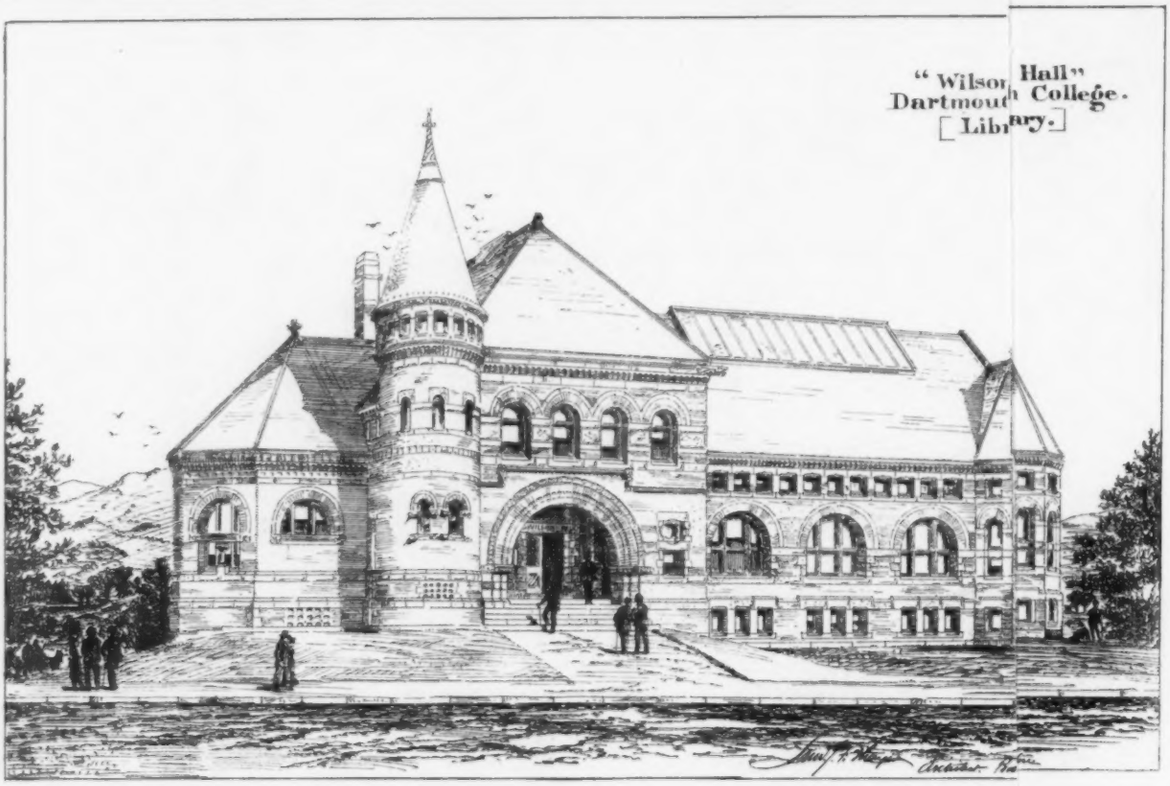

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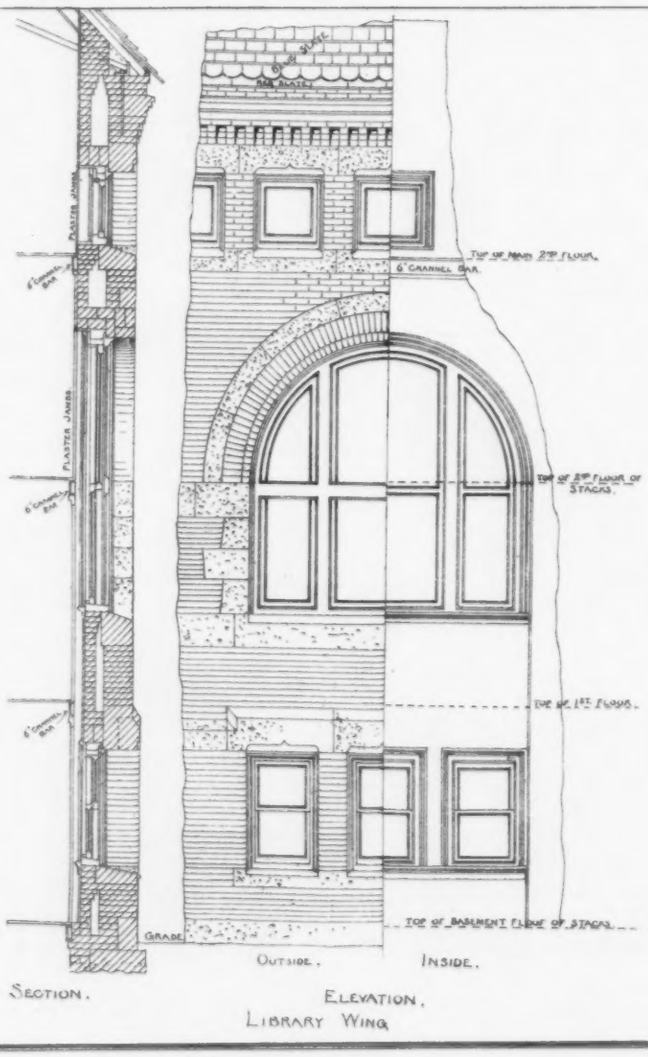

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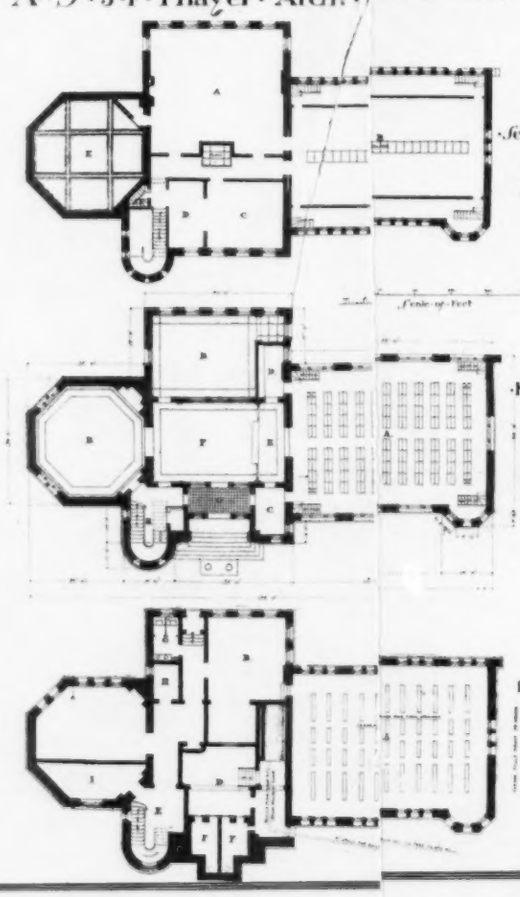

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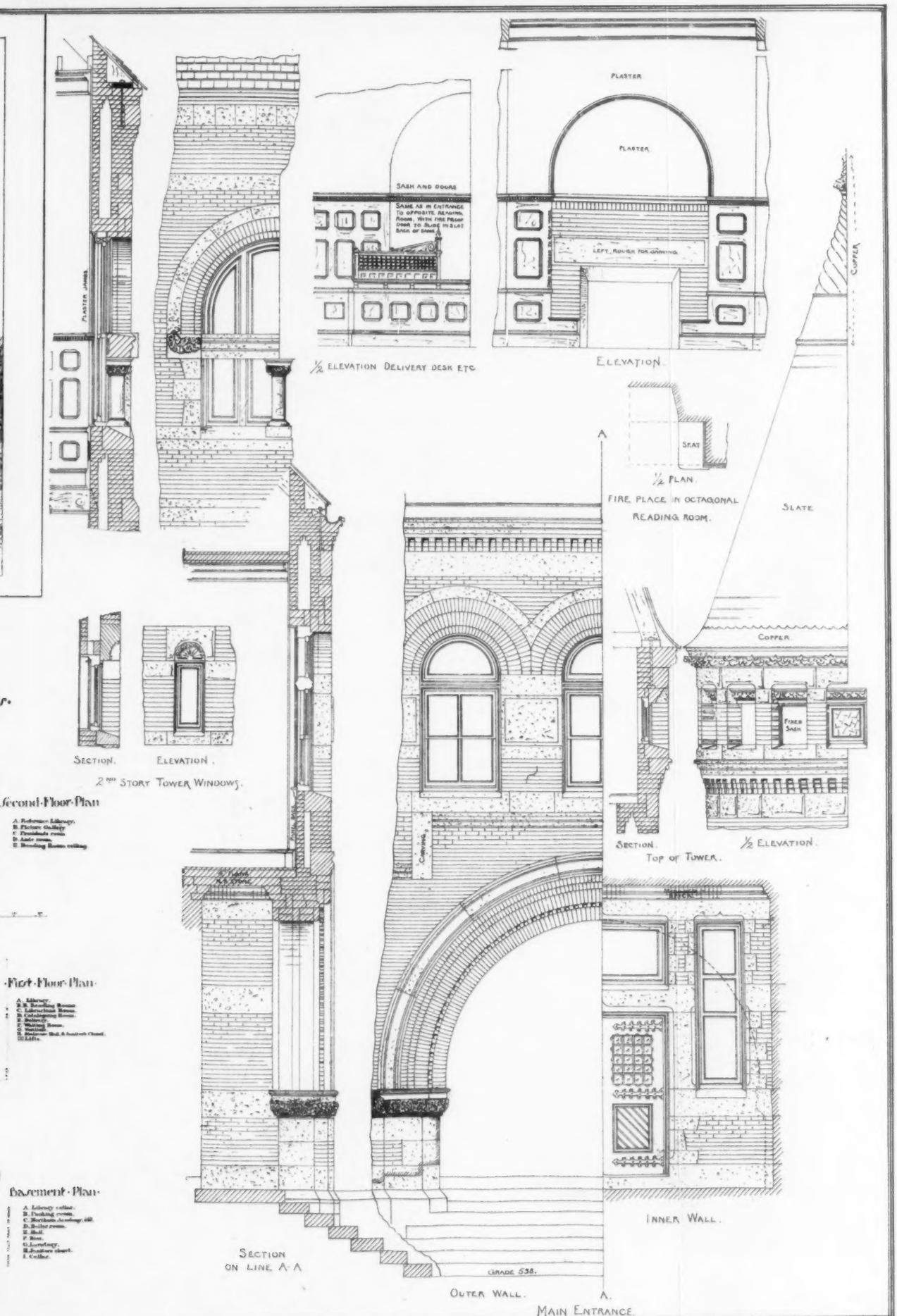

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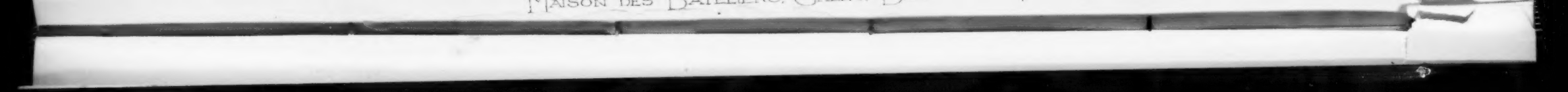
Maison des Ballets Grand

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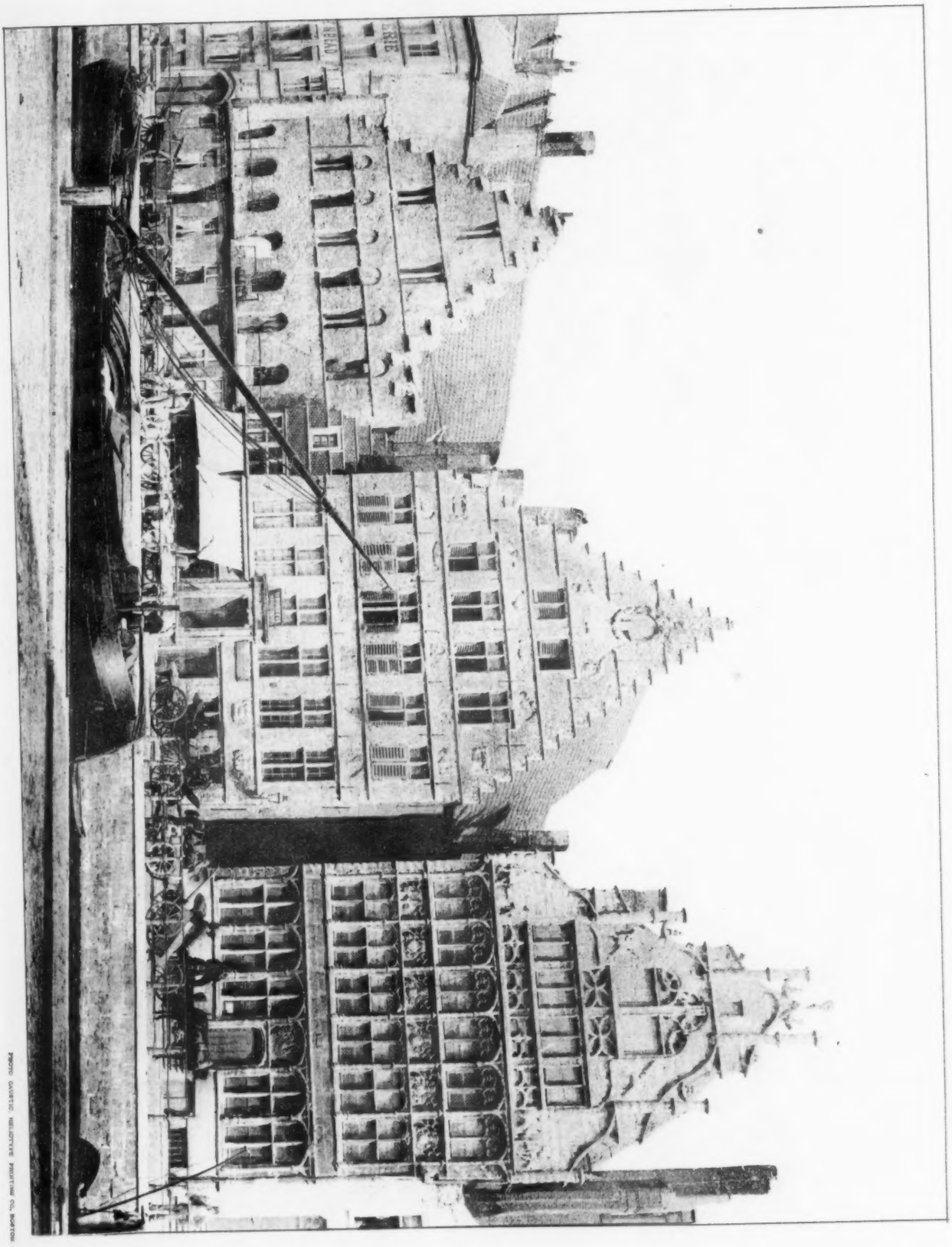

MAISON DES BATELIERS, GHENT, BELGIUM.—1884

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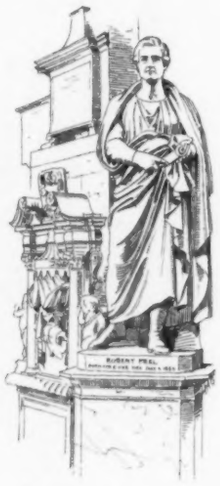
LONDON MONUMENTS AND STATUES N.6.

Right Hon. W. E. Gladstone
Walbrook. E.C.
Bruce Joy. Sculptor



Sir. Robert Peel Bart.
Westminster Abbey
Gibson. Sculptor

Major John Andre
Westminster Abbey
Van Gelder. Sculptor

William Wilberforce
Westminster Abbey
Joseph. Sculptor

Henry Grattan
St Stephen's Hall
Westminster Palace

St Stephen's Hall Westminster Palace

John Selden
Robt Walpole
Lord Chatham
Will^m Pitt (Earl of Chatham)
Henry Grattan

* * * * * *

Lord Somers
Lord Mansfield
Charles Jas Fox
Edmund Burke

William Pitt (Earl of Chatham)
St Stephen's Hall
Westminster Palace
Macdowell. Sculptor

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other enamels. His last authentic and dated terra-cottas, ornament the façade of San Domenico at Urbino: in the tympanum of the entrance, the bronze door which was made by Masaccio, Luca has placed a Madonna and child with two saints on either hand; and in the pediment above he has set a circular relief with a half-length of God the Father, surrounded by angels, and in an attitude of benediction. Masaccio's diary tells that he asked these works at Luca's hand, the only ones, it would seem that Luca ever sent across the Apennine's, and gives their date as well. Since it is so early a date as 1452, one feels sure that many another creation followed whose time cannot be fixed with such decision; but we learn that during the last ten years of his life, he was too feeble to do more than rejoice in Andrea's labors.

Among the many Della Robbias in non-Italian museums there is but one, it seems, which is indisputably a Luca. This is the huge polychrome relief with the arms of Réné of Anjou in the South Kensington collection. There are four others, however, and of greater importance, which one is tempted to ascribe to him; the "Monk Writing," also at South Kensington, and the three great circular reliefs in the Cluny Museum at Paris; two with allegoric figures of Temperance and Faith, one with a Virgin and child. The *rétable* in the Metropolitan Museum at New York is called, of course, a Luca, but as we shall see, it is an Andrea.

Let me add now that Luca did not repeat his terra-cottas, did not mould one in the pattern of another, but produced in each instance a wholly new creation. And I believe I may say as much for his immediate successors, though later on replicas became all too common. In another chapter I will try to vivify a little the brief bald catalogue I here have written. I will try, words being all too rough for so delicate a task, to explain a little the essential quality of Luca's art.

M. G. VAN RENSSELAER.

ESTIMATING BY QUANTITIES.

Sir Rowland Hill, London, England.

THE appearance in a recent issue of the article headed "The Payment of Quantity-Surveyors," and which was copied from our contemporary the *Building News* of London, may make it welcome to many architects and builders to hear something more about this system of estimating by quantities as practised in England. It was generally introduced in London about twenty years ago, and met with so much support from architects and builders that it speedily found its way into the provincial towns, and is now the recognized practice even for the smallest contracts. The old way of estimating, such as it is practised in our country, had long been felt to be an insecure and unbusinesslike performance, especially for large and complicated structures, offering no protection to the builder against possible mistakes in his figuring; no security to the architect; and no guarantee to the owner.

The building business is a precarious one at any rate, full of risks and uncertainties. A builder would often be asked to give a figure for a contract in so short a time, that he could hardly familiarize himself with the drawings. Estimating under such conditions is reduced to a kind of rough-and-ready guess-work, and builders have to trust to "arranging matters somehow," should they find that they made a mistake in their price. Should such arrangements not be possible, the builder may land himself in bankruptcy; the architect will reap much trouble and discredit, and the owner will have to bear the loss. It was therefore thought desirable and just that builders should be furnished with more complete data than drawings and specifications alone upon which to base their estimates, and that they should have a *bill-of-quantities* of all materials and labor required for a contract. This had long been the practice in Paris, where, in addition, all estimates are based upon the official price-book of the City of Paris for public works, generally called "*Prisée de la Ville*," and where builders hand in their estimates upon a percentage discount on the prices of the above book. The frequent intercourse of English architects with their Parisian brethren no doubt influenced the adoption of quantity-surveying in England.

The surveyors were drawn from the ranks of builders' account and prime-cost clerks, where they had already acquired something of the proficiency which this new status called for, and before long clever and experienced men took up the line, and marked out a reliable and scientific system of measuring for every building trade. To-day, quantity-taking in London is a most minute and precise operation down to the smallest detail of builder's work. The quantity-surveyor writes the specification, having previously settled all items with the architect; he takes notes of all extra work or deviations and deductions occurring during the progress of a building, and finally measures up, and settles up the builder's claim.

At first the surveyors were employed in the architect's offices as a part of the general staff. It was, however, soon found that this arrangement complicated the business of large offices too much, and the surveyors were given an independent professional standing, with offices of their own, separate from the architects. The Institute had already formally sanctioned the new practice, and settled the rate of payment as follows: The surveyor to receive two-and-one-half per cent on the contract price, to charge for the lithographed specifications and the bills-of-quantities extra, the whole to be added by the builder to his estimate, and to be paid by him to the surveyor out of his first certificate. These rates to which the members of the Institute of Architects agreed to hold themselves were so favorable that many architects and draughtsmen left their calling and turned quantity-surveyors, and many years had not passed before it had, through competition, become the general practice for the surveyors to hand over one per cent of their two-and-one-half per cent to the architect who employed them, for it is in nearly all cases the architect who selects the quantity-surveyor. This practice caused some bad feeling, as may be readily supposed. Architects were soon compelled for the sake of their good name to sever all connection with or interest in the quantities, and thus the surveyor's commission has gradually become reduced to one-and-one-half per cent, and a good deal of work is now done at one per cent. It is very profitable at that, if there is a steady flow of business.

In course of time an important change was made in the position the quantities occupy towards the contract. At first the surveyor was made responsible for the correctness of his quantities, and they became part of the contract. The builder was bound to carry out the work as drawn and specified, and if, to do this, he found himself called upon to give more material and labor than he had estimated for per bill-of-quantities, the architect allowed him a claim for all over against the surveyor, who had to pay. I know personally of several cases where the surveyor was made to pay heavy sums for mistakes or omissions. The unfairness of this system became however soon apparent. Surveyors are often called upon to take off the quantities for a building in a very short time; they have to rely upon assistants, and the most careful man can make a mistake in multiplication, or apply a wrong scale to a drawing. Moreover, there are many building items as in plumbing, gas-piping, and interior finish that cannot be measured with perfect accuracy. For these reasons surveyors are now rarely made responsible for their quantities, and these latter do not constitute part of the contract. The builder hands in his estimate upon the bill-of-quantities supplied, and if his tender is accepted the quantities are sealed and kept by the architect until the final measuring up, when all extras or deductions are made upon the prices affixed by the builder himself to the bill-of-quantities. For all uncertain items, and for such work for which estimates are intended to be obtained at the finishing-up stage of a building it is now customary to place in the quantities liberal provisional sums settled between the architect and surveyor, and which are accounted for separately.

The economical soundness of the quantity system is proved by the fact that the builders are in its favor with one voice; that building has become a more safe and more profitable business, and that owners obtain better and more economical work for their money. And much arduous labor is taken from the shoulders of architects who enjoy a large practice, and the moral status of the profession has undoubtedly been raised. It would be very desirable that some system of quantity-surveying be introduced here, perhaps with certain modifications and less minuteness than practised in England, but of sufficient thoroughness to place estimating upon a sounder footing. Builders, architects and owners would soon appreciate its many advantages.

JOSEPH A. STARK, Architect.

THE ILLUSTRATIONS.

[*Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.*]

STORE FOR MARTIN RYERSON, ESQ., CHICAGO, ILL. MESSRS. ADLER & SULLIVAN, ARCHITECTS, CHICAGO, ILL.

THE dimensions of the buildings are 68′ x 170′, the piers and large constructive features of the front are of Bedford oolitic limestone, and the bay-window fittings between them of cast-iron and plate-glass. The side and rear walls are of bricks. The posts and girders throughout the interior are of iron, fire-proofed with porous terra-cotta. The floor joists measure 3″ x 14″, and are set to 10″ centres. The plastering is to be done on wire-cloth put on iron furring-strips, hung 2″ below the joists, and there will be a mortar deafening 2″ thick over the joists. To prevent the spaces between joists from forming flues across the building, there are to be on the iron girders, brick walls extending the entire height of the joists; and to prevent thespaces behind the furring-strips from forming similar flues, brick ledges are to be built out above and below the joists, and the base will be formed of Keene's cement on these ledges. The two elevator shafts in the building will be made fire-proof, as also the boiler and engine room. The roof boards will be covered with porous terra-cotta. In short, an effort is being made to construct, without excessive cost a business building, the contents of which may burn without destroying the building itself. The quantity of wood finish will be reduced to a minimum, and all of that which is used, is to be of white-oak. The floors will be of narrow strips of maple. The cost of the completed building will be $130,000. The building is located most favorably for lighting, having light in front, rear, on the whole of one side, and on half of the other side.

DARTMOUTH COLLEGE LIBRARY (WILSON HALL), HANOVER, N. H.
MR. S. J. F. THAYER, ARCHITECT, BOSTON.

This building, now approaching completion, is built of red brick and Longmeadow sandstone, with slate and copper for roofing. The portion containing waiting-room, reading-rooms, etc., is constructed with heavy timbers and planking, for both floors and roof, the former with wire-lath, iron furrings six inches on centres, and plaster for ceilings, with an upper floor of matched birch, on two layers of thick asbestos paper. The library proper or book-room has three tiers of stacks, one on a level with the main floor, one below, and one above, each seven feet six inches high. The whole capacity of this room is one hundred and thirty thousand volumes. It is contemplated to add one tier when needed. At present this space is to be used as a picture-gallery, partitions being set some distance from the walls, giving a plain surface about fifteen feet high, the whole length of the room, in proper relation to a large skylight. This book-room has iron stacks and perforated iron floors (except picture-gallery). An attempt has been made to get together the best detail for this system of storing books. The roof is carried on iron trusses seven feet apart, covered with plank, lag-screwed to the rafters and furred, lathed and plastered as before named. All partitions are of "plaster blocks," no wood studding or furrings being used except nailings for finish. The area of the building is 6060 feet, and the construction account will not materially vary from ten dollars per square foot.

MAISON DES BATELIERS, GHENT, BELGIUM.

This building, the one on the right of the view, was erected in 1531 by the Guild of the *bateliers*.

LONDON MONUMENTS AND STATUES.—PLATE VI.

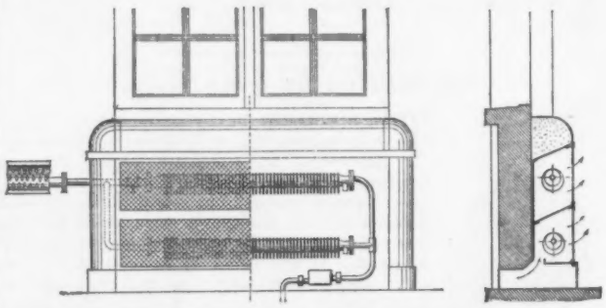
PART OF THE FACADE OF THE NATIONAL BANK OF BELGIUM, ANTWERP, BELGIUM.

SOME FEATURES OF PARIS SCHOOL ARCHITECTURE.

The public-school system of Paris, and indeed of the whole of France, can be said to consist of three distinct departments: the district and common schools, the lysées, and the University, the latter including all of the higher colleges and technical schools. The French lysées do not correspond to any department of the public-school system of America, for while our high-schools are but connecting elements between the common schools and the colleges, the lysèes receive pupils of all ages, a previous training in the common schools not being necessarily called for, while some of them extend the course of training into what with us would be found only in a college. Besides this they assume entire control of the pupil, who pays a stated sum for tuition and generally lives within the school precincts, though in most of the larger lysées a certain number of pupils are received as *externes*, being in the school only during the day. The leading lysées of the city are of quite recent construction; indeed, the two which perhaps can best serve as types, namely, the Lysée Lakanal at Sceaux and the Lysée Janson de Saillie at Passy, were barely finished in season for the present fall term.

There is little in the smaller common schools to interest the architect. The arrangement is always very simple, with separate rooms for boys and girls, and a limited quantity of cheap, uncomfortable-looking furniture. The French hardly rise to an appreciation of any need for such desks and chairs as are found in the large American public schools. Indeed, according to the report of the Jury of the Exposition of 1878, we are thought to provide too luxuriously in this direction, and to make our school-boys discontented with the humbler fittings of their own homes.

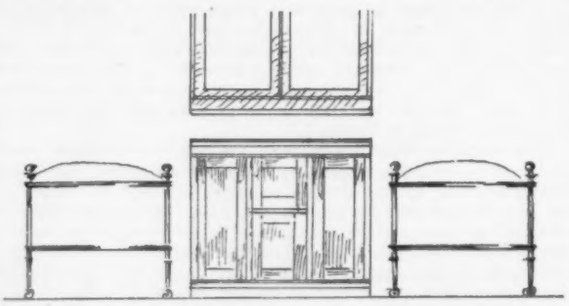
Of the lysées, nearly all are interesting architecturally, and a visit to Paris would not be complete without a careful study of at least one of the many which are scattered about the city. The two lysées above referred to are the latest expression of architectural thought in this direction, and it is interesting to note how little they differ in general arrangement of the plan, and in special features of accommodation, notwithstanding the fact that the Lysée Lakanal is located in the country, with unlimited land on all sides, and intended for *internes* only, while the Lysée Janson is in the closely-built-up quarter of Passy, on a site barely sufficient for the purpose, and receives pupils from outside. The plan in each case may be said to consist of a central portion devoted to the administration, with wings and Ls on either side containing the class-rooms, which are arranged continuously on the street side of the building, an open corridor serving as means of communication and extending entirely around the inner courts formed by the wings. The dining-hall and gymnasium occupy a position inside the court on the axis of the building, while the kitchen and dependencies, the infirmary, engine and boiler houses, and servants' rooms, are placed at the rear, completing the rectangle. The dormitories, professors' rooms, laboratories, and a few extra class-rooms occupy the upper story, while any attic space is neatly plastered all around and utilized in connection with the ventilating arrangements. This description would not exactly fit either of the lysées, but coincides with what may be taken as a typical plan of this class of school edifice. The class-rooms are small, not over four hundred square feet in area. So far as observed, no special effort is made to secure direct sunlight in these rooms. One feature which would strike an American school-boy as being peculiar is that in the door of each class-room is a small glazed peep-hole, through which a guardian, passing along the corridor, can see what is taking place inside. The rooms are lighted by windows on one side, the pupils being seated so that the light comes from the left. The heating is by steam, and it may be mentioned in



this connection that the heating and ventilation of both lysées, as well as of nearly all the more important buildings in the metropolis, is arranged and put in by Geneste *fils et* Herscher, heating engineers, who have acquired such a position as to entitle them to be regarded by the architects more as *collaborateurs* than contractors, and who are usually allowed to carry out their own ideas. The heating of the class-rooms is by a combination of direct and indirect radiation, as illustrated by the adjoining figure. The two rows of flanged pipe are placed under the window-seat, the upper pipe heating directly the air of the room, and compensating for any loss of heat from the window. The lower pipe is in a chamber connected with an air-duct from out of doors, so that fresh, warmed air is introduced into the room, the quantity being controlled by a sliding valve at the bottom. The supply of steam is regulated by a cock in the passage outside of the class-room. A thermometer is hung inside and arranged to register in the passage, so that the attendant in charge of the building never has to enter the room.

The class-rooms are ventilated through registers in the wall near the ceiling, on the side away from the windows, the vitiated air being led into the attic space through plastered ducts delivering into a ventilating turret in the roof.

There are no large lecture-rooms in these lysées, the preference seeming to have been given to a number of small classes, rather than a few large ones. The dormitories are large, bare rooms, lighted on

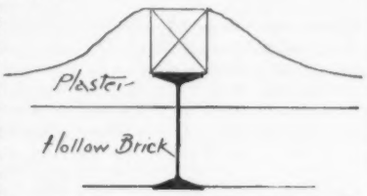


both sides, containing from twenty-five to thirty beds, and arranged with one large window to each bed. There is no opportunity for anything like privacy on the part of the pupils, and hardly any closet room, beyond a large store-room shared in common. In the Lysée Janson, the windows are set about five feet from the floor, and underneath is built into the wall a small cupboard and set of shelves,

approximately as shown by the adjoining sketch. The dormitories are but slightly heated by a single line of corrugated steam-pipe running around the room, the temperature not being kept higher than 9° Centigrade. The ventilation is provided for in the same manner as described for the class-rooms. The washing appliances are all in one room adjoining the dormitories. The water-closets or more properly the privies — *système diviseur aux cuvettes* — are located in the court-yard, and have the primitive *sans façon* arrangements so familiar to any one who has ever sojourned in France.

The dining-rooms are on the ground floor as previously explained. In the Lysée Janson there are two, both at some distance from the kitchen, with which they are connected by a small tramway. The eatables are wheeled into position in a hand-car, and distributed to the tables in a wholesale, garrison-like manner which is doubtless quite expeditious and economical of help, but which would hardly tend to improve the table-manners of the students. The floors are tiled, and the walls painted over the plaster or provided with high cement dadoes. The tables are of the ordinary iron, marble-top, restaurant pattern, and the students sit six or eight at a table on plain benches. Not quite equal to Messrs. Ware & Van Brunt's generous accommodations in Memorial Hall, Harvard.

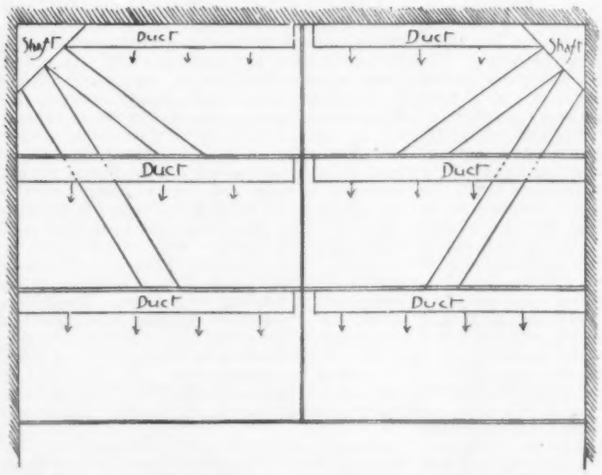
The construction in both of the lysées is fire-proof throughout. The floor-beams are of iron, spaced quite close together and made correspondingly light, and filled in flush with plaster, or better yet, as observed in a few cases, with long, hollow bricks made to just rest on the flanges; and set and levelled up with plaster. Wooden sleepers are laid over the beams and thoroughly bedded in plaster, so that no wood is exposed. The sketch shows this construction.



In neither of the lysées was there any general reading or sitting room for the boys. Indeed, while everything was well arranged for work, the provisions for play or quiet comfort were very insignificant. Possibly French school-boys never feel any need for such conveniences: certainly they have very few in the lysées.

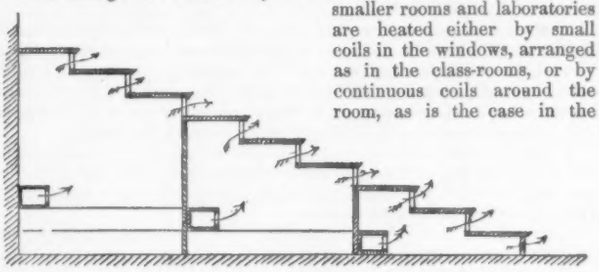
As a type of the superior technical schools, the recently completed building for the Ecole Centrale des Arts et Manufactures is perhaps the best example that could be chosen. It is located in the heart of the city, and receives *externes* only. The plan consists essentially of four wings forming a rectangle, and enclosing a large open court. Across the front on the ground floor are the rooms for the administration. On the right is the dining-room, a wide passage extends around the court, with stairs at each angle. The upper floors are arranged with amphitheatres at each corner; physical laboratories, reading-rooms, etc., across the front; and double rows of class-rooms on each side and at the back, reached by wide central corridors. In the top story, at the sides, are the large chemical laboratories for the students, and smaller similar rooms across the front for individual research.

The most interesting features about the building are the arrangements for heating and ventilating, which are very complete and extensive, and promise to be quite successful in operation. The heating is mostly by steam. The small class-rooms are heated in the same manner as the class-rooms in the lysées previously described. The large amphitheatres at the corners are heated directly by two radiators in the room itself, and indirectly by coils in the cellar, over which air is drawn from out of doors, and forced by fans up two large shafts,



one at each corner of the room, which connect with ducts or chambers in the space under the raised floor of the room. Along the fronts of these ducts are gratings, from which the warm air escapes and passes into the room through the open risers. The space under the floor is divided into three sections by tight partitions, so that the heat can be drawn from one duct or all, as desired. The accompanying figures will illustrate this arrangement. The ducts are made entirely of plaster, the walls being about an inch-and-a-half thick.

The dining-room is heated by hot-air furnaces in the cellar, and the smaller rooms and laboratories are heated either by small coils in the windows, arranged as in the class-rooms, or by continuous coils around the room, as is the case in the



chemical laboratory. The coils referred to are throughout of the excentric disc pattern shown on the first figure. The corridors are heated only by the steam-supply pipes, which are run on the ceilings. The class-rooms are kept at 15° to 16° Centigrade; the amphitheatres at 20° Centigrade, and the stairways and dining-room at 12° to 14° Centigrade.

The class-rooms have ventilating registers in the inner walls at top and bottom, from whence the vitiated air is drawn up into the attic. Similar ventilation flues lead also from the amphitheatres. The chemical laboratories have ventilating registers in the walls, and also special flues connected with the chamber in each desk serving to carry off fumes from acids, etc. All of these flues are constructed of plaster in the same manner as the hot-air ducts, and are brought together in the attic, and led to large ventilators in the roof. The draught is forced by large exhaust fans, worked by Gramme electric-machines. The application of electricity to such a purpose is considered to a certain extent experimental, but thus far the results seem to have been very satisfactory. It certainly is extremely convenient, the motor being quite small and easily located in positions where shafting or long belts would be impracticable. The power is communicated to the fan by a small belt running from the pulley wheel of the motor, which revolves at the rate of 1000 turns per minute. The generator is placed in the cellar. By an ingenious arrangement of resistance-coils, if the belt is broken or loosened, the number of revolutions of the motor is greatly increased, and the intensity of the current lessened, whereby a connection is broken, and a signal rung in the engine-room, by which the disorder is at once located. Even should one of the fans cease to operate for a considerable time, the ventilation would not be seriously interfered with, as the ventilation shaft in the roof would act naturally to a considerable extent.

The construction of the building is fire-proof throughout, of the same description as explained for the Lysées. It is interesting to note how freely plaster is used everywhere. In the attic everything is covered with it; floor beams, under side of roof and vertical surfaces. The stairs are of iron construction, but filled in solid, so that in case of fire they will not be the first to bend and fail, as would otherwise be the case. Altogether the Ecole Centrale is about as practical a building as one ever meets, and though the plan could hardly be simpler, it is very compact, and well adapted to the requirement of the school.

C. H. BLACKALL.

PLANS FOR A TURN-HALL.

NEW YORK, February 24, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — Of all the gymnastic establishments which are known to me, and they are many, the "German Gymnasium" in St. Pancras Road, London, England, is, in my opinion the best arranged. It is convenient and compact, and gives an impression of largeness, although contained upon a comparatively small space. The gymnasium-hall proper is spacious and lofty, with good light and ventilation, and there is a fine entertainment and meeting room with a small stage attached. The building is erected between two party-walls, and has no side lights, and its general plan can be adopted for a society of any number of members. It would be presuming too much upon the kindness of the Editors to give a detailed description of this plan, but if your correspondent will communicate with me, I will give him any information he may desire. Yours respectfully,

JOSEPH A. STARK, Architect.

COMPETITIONS.

BUFFALO, N. Y., March 3, 1885.

TO "W," AUTHOR OF LETTER TO THE *American Architect*, February 21, 1885.

Dear Sir, — If you care to set the ball rolling, I will engage to send a protest from the six best architects in western New York on "the right to reserve all prizes" in the Richmond Competition advertisement in the *American Architect* of February 28, 1885.

Each man will certainly be willing to send at the same time $1.00 to the *American Architect*, as a nucleus fund until we can get together next winter and organize a small "Union Générale." I

propose you assume to yourself the right to call such meeting, or get the paper to do so, for some time in November or December, in New York or Boston, and that meantime you learn from the Institute what assistance, if any, may be had from them, and perhaps the Western Association also.

Though I am aware there will be much work and disappointment before we can correct any, the slightest abuse, I am willing to give you all the assistance in both time and money I can command, as I think your way of going at it a good one. Mr. Illsley will assist the movement, and I will engage to start similar interest in Chicago, St. Paul, Minneapolis, Milwaukee, Louisville and Rochester.

I shall be glad to hear from you in the matter, and have suggested the Richmond job in no expectation of being able at so late a day to get *that corrected*, but merely with the thought it was a sufficiently red rag for the architectural bull.

Very sincerely, EDWARD KENT.

["W" sends us the foregoing letter, with privilege to use it at our discretion. — EDS. AMERICAN ARCHITECT.]

EL PASO, March 1, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — The last article on "Competitions" in your paper has a great deal of truth in it, and I, for one, will go into any scheme that will help towards better methods in conducting them. Have been through two of them lately, and cannot say a good word about either. Respectfully, E. KRAUSE.

NEW YORK CITY, March 9, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — As the leading architectural journal of the country, you owe it to yourselves and to your subscribers to set a good example in the matter of conducting a competition. In my communication of last week, regarding the recent "stable competition," I suggested that the cost of the designs submitted should be assessed by one competent man, as if for execution in Boston. Your editorial comment on this was that it would be too expensive, and you ask, who would pay for the estimates? I would respectfully suggest some such arrangement as the following: Instead of offering three prizes of thirty dollars, let it be three prizes of twenty-five dollars each. The fifteen dollars thus mulcted from the prizes ought to pay for reliable estimates on even one hundred designs. It would if some such plan as this was followed: Let the main quantities be taken off by a competent draughtsman — not every item, but enough to serve as a fair index of cost. Let these quantities then be submitted to a practical builder, with the designs, and I think he could dispose of the designs in one day. A competent builder for such designs could be had for five dollars. Instead of reserving a fixed sum for obtaining estimates, let it fall, whatever it might be, on the prize winners. I would rather have the prize twenty dollars, if need be, than to run the risk I pointed out in my former communication.

In your issue of February 21 there was a communication, signed "W.," which was vigorous and to the point. His suggestion regarding competitions I would like to see carried out in good faith. The competition for the city-hall at Richmond would be a good one to try it on first. I wrote to the promoters, asking for information concerning the manner of the award, and received a reply to the effect that a committee of the common council, assisted by the city engineer as an expert, would constitute the jury, and that I might sign my plans with a *nom de plume* or my real name, just as I liked. After such a naïve admission, I decided not to compete.

I am yours, etc. W.

[In the next competition we announce, we will endeavor to put into execution our correspondent's suggestion, or a modification of it, but we are free to say that we do not believe any builder we would be willing to trust would furnish estimates on the terms mentioned. Apparently, if all architects were "W's," a cure might be found for the competition evil. — EDS. AMERICAN ARCHITECT.]

CONNECTION OF STONE AND WOOD WALL IN HOUSE AT "DELLWOOD," WHITE BEAR LAKE, NEAR ST. PAUL, MINN.

BOSTON, January 26, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — In an illustration of a house by Mr. Cass. Gilbert, which appeared in a recent number of the *American Architect*, a part of the exterior which is shingled butts against a rough rubble wall. Would you kindly explain how the junction of wood and irregular masonry is effected so as to keep out the rain?

Yours truly, AN OFFICE BOY.

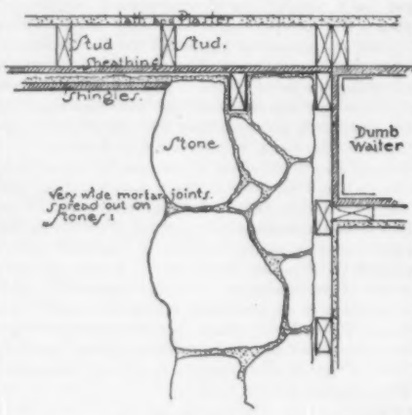
To this Mr. Gilbert replies as follows:

ST. PAUL, MINN., February 21, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — In answer to yours of 27th January, I would say that the construction of the house at Dellwood, at point mentioned, is, to the best of my remembrance, as per sketch herewith and notes accompanying same.

The foundations for the building were put in very late in the fall, and completed to the top of first-floor joists, which were set and covered with a rough flooring. In the following spring the carpenter-work was commenced, while it was yet too cold and frosty to risk the construction of mason's work, and the framing was done and sheathed (being carried on temporary posts and braces) before the stone wall at this point was recommenced. After stone-work[1] was completed, it was allowed to settle and thoroughly dry out before the posts and braces were removed and framing allowed to rest upon it. And finally all joints were carefully made tight by repointing with cement mortar and leaving a grooved joint for the shingles to fit into. I would also say that the shingles themselves were thoroughly soaked in oil (each batch as required) for several days before being used, and, on completion of the house, given another coat of oil and stain. This makes the wood at the point in question impervious to water, and prevents, in my opinion, rot that might be caused by water getting back of shingles at the joint with stonework.



Yours respectfully, CASS. GILBERT.

THE VOTE FOR THE BEST TEN BUILDINGS.

PHILADELPHIA, PA., March 9, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — In reference to your invitation for "votes" on the best ten buildings, etc., — is it understood that the voters' names appended to their lists will be considered as confidential? Also, is personal inspection of the buildings necessary to form an opinion?

H. M.

[THE identities of the voters will not be revealed. A personal knowledge is of course desirable but not essential, since photographs and published drawings may furnish all that is needed in forming an opinion of a building. — EDS. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS.

A MUSEUM OF DECORATIVE ART, PARIS. — A special museum of decorative art is to be built in Paris on the Quai d'Orsay, and will be ready for the grand centenary of the republic in 1889. While planning new buildings, the Parisians, however, are at last looking to the preservation of old architectural treasures, and the Society of the Friends of Parisian Monuments have set to work to rescue the sculpture on the Porte St. Denis, which is gradually being destroyed, and to draw up a list of all similar relics of the past likely to be pulled down unnoticed. —*New York Evening Post.*

A CURIOUS MEXICAN SUSPENSION BRIDGE. — Mr. J. Foster Flagg, M. Am. Soc. C. E., describes a bridge which was remarkable for being the work — from his own design — of an ordinary uneducated Mexican laborer or peon, combining, as it did, crudely, several principles of bridge construction. Bridges in Mexico are generally built of arched masonry, anything like a truss being, before the advent of railroads, almost unknown. In the State of Colima, where this particular structure was built, there were very few bridges of any description, and those few the ordinary arched ones. The peon referred to was, some four years ago, the ferryman where a trail for cargo mules crosses the River Armeria. He happened to see a copy of *Harper's Weekly*, which had in it an illustration of a suspension bridge. As a result of his study of this picture, he put up a structure quite closely imitating the ordinary suspension bridge; the cables and suspenders being twisted from wild vines (vejucos), the cables being passed over rude frames for towers, and anchored to huge boulders in the river banks. The whole structure was built without nails or metal of any kind. It was carried away by a heavy freshet the same year, and directly afterwards the same man built another structure quite original in design. It was also put together without nails or metal. The cable was formed of wild vines twisted, and all the joints tied together with lighter vines, no manufactured rope being used in the structure. The piers were made by driving light piles into the river bed, in the form of a square, tying them together with other poles, and filling with stone. The towers were natural forked sticks; the top fork being used to support the cable, and the lower fork to support the timbers. The timbers upon these forked sticks were really rude cantilevers, weighted at the shore end and supporting the timbers of the central span. The only point of attachment of the cable was at the centre of the bridge. The roadway was of rude joists and boards, sufficient to pass one animal. The bridge was strong and rigid.

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[1] The stone here used were such as could be gathered from the lake shore, and are rough, broken and rounded granite boulders and "nigger-heads" of colors varying through light-yellow, brown, red, green and black. The mortar used was mixed from Redwing lime and Louisville cement. The framing was done before stone-work was completed, then sheathed and covered with tarred paper, which was carried in back of stone-work, and over a 2″ x 4″ stud set on to sheathing to break the straight joint. The stone-work was carefully repointed after it had dried out, a cement joint being made next to the paper, into which joint ends of shingles were worked.

SUMMARY OF THE WEEK.

Baltimore.

BUILDING PERMITS. — Since our last report ten permits have been granted, the more important of which are the following: —

Jos. H. McAfee, 2 three-st'y brick buildings, n s Biddie St., between Valley and Ensor Sts., and two-st'y brick building in rear.

Jas. Thurston, 20 two-st'y brick buildings, s w s Calhoun St., n of Presburg, and 2 two-st'y brick buildings, w s Gilmor St., near s w cor. Presburg St.

Boston.

BUILDING PERMITS. — *Brick. — Hanover St., No.* 155. *Blackstone St., No.* 163, *and North Centre St., Nos.* 115–119, mercantile, 48′ 6″ x 59′ 6″ x 64′; Asher Ratchesky, owner; Sampson, Clark & Co., builders.

Huntington Ave., near Wigglesworth St, schoolhouse, 114′ x 116′; owner, City of Boston.

Boylston Ave., near Green St., tenement, 54′ x 64′; owner and builder, Patrick Meehan.

St. Botolph St., No. 207, dwell., 25′ x 50′; owner, Chadwick Stillings; builder, O. L. Stillings.

West Chester Park, Nos. 220–232, 7 dwells., 23′ x 50′; owner, Chadwick Stillings; builder, O. L. Stillings.

Huntington Ave., No. 242, dwell., 25′ x 50′; owner, Chadwick Stillings; builder, O. L. Stillings.

West Chester Park, dwell., 25′ x 50′; owner, Chadwick Stillings; builder, O. L. Stillings.

Gordon St., cor. Call St., apartment-house, 57′ 8″ x 82′ 9″; owner, Thomas P. Proctor; builder, J. H. Besarick.

Brooklyn.

BUILDING PERMITS. — *Grand Ave.*, e s, 90′ s Park Ave., 3 three-st'y frame tenements, tin roofs; cost, each, $3,500; owner, James Carey, 204 Clermont Ave.; architect, J. F. Carey; builders, Long & Barnes.

Noble St., n s, 120′ e Franklin Ave., three-st'y frame tenement, felt and gravel roof; cost, $4,860; owner, Nathaniel Roe; architect, Frederick Weber; builder, John Fallon.

Newell St., e s, 250′ s Nassau Ave., three-st'y frame tenement, felt and gravel roof; cost, $3,950; owner, Isaac A. White; architect, Frederick Weber; builder, John Fallon.

Fourth Ave., s e cor. Sixteenth St., 3 three-st'y brick stores and tenements, tin roofs; cost, $20,000; owner, Charles Boenau, cor. Fourth Ave. and Sixteenth St.; architect, Walter Coots; builders, Assip & Buckley.

Penn St., s s, 120′ e Marcy Ave., 2 three-st'y brown-stone tenements, tin roofs; cost, each, $7,500; owner, M. Moser, 435 Sixth St., New York; builders, George Lehrian & Sons.

Skillman Ave., No. 111, three-st'y frame tenement, tin roof; cost, $4,500; owner and architect, Robert Mullen, 166 East One Hundred and Nineteenth St., New York; builder, John Rueger.

Sumner Ave., e s, 60′ s Macon St., two-st'y brick stable, felt and gravel roof; cost, $3,500; owner, Wright Travis, cor. Willoughby and Bedford Aves.; architect, J. Sands; builder, Philip Sullivan.

Kosciusko St., n s, 100′ w Stuyvesant Ave., 16 two-st'y brick dwells., tin roofs; cost, $45,000; owner and architect, Thomas Ellson, 1134 Lafayette Ave.; builders, W. Maske and John Rueger.

Central Ave., w s, 50′ s Melrose St., three-st'y frame store, tin roof; cost, $4,000; owner and builder, John Bosch, 696 Flushing Ave.; architect, Th. Engelhardt.

Sumpter St., n s, 100′ e Howard Ave., three-st'y frame tenement, tin roof; cost, $4,250; owner, Chas. Schmitt, New York; builders, Charles Horn and Jacob L. Pirring.

North Ninth St., s s, 100′ e Third St., three-st'y frame tenement, tin roof; cost, $3,500; owner, Peter Crowley, 376 Third St.; architect, Th. Engelhardt; builders, Peter Crowley and Jos. Wagner.

Myrtle Ave., junction of De Kalb Ave. and Cedar St., 4 three-st'y brick tenements and stores, tin roofs; cost for all, $30,000; owner and builder, Fred. Herr, 778 Broadway; architect, Th. Engelhardt.

Jefferson St., s s, 200′ w Marcy Ave., 6 three-st'y brown-stone dwells., tin roofs; cost, each, $9,000; owner and builder, Harman Phillips, 289 Jefferson St.; architect, I. D. Reynolds.

Grand St., Nos. 81 *and* 83, n s, 137′ e Second St., one and two st'y brick skating-rink, tin roof; cost, $10,000; owner, E. H. Schlueter, Grand St., cor. Second St.; architect, Th. Engelhardt; builder, not selected.

Broadway, No. 797, e s, 25′ s Adams St., four-st'y frame store and tenement, tin roof; cost, $5,500; owner, Louis Wagner, Bushwick Ave.; architect, Th. Engelhardt; builder, not selected.

Lewis Ave., No. 12, w s, 75′ n Stockton St., two-st'y frame dwell., tin roof; cost, $3,500; owner, Frederick Koch, Hopkins St.; architect, Th. Engelhardt; builder, Jos. Frisse.

Lafayette Ave., n s, 175′ e Sumner Ave., 5 two-st'y brown-stone dwells., tin roofs; cost, each, $5,000; owner, John Cregier, 125 Vernon Ave.

Van Buren St., n s, 105′ w Sumner Ave.; 6 two-st'y brown-stone dwells., tin roofs; cost, each, $4,500; owner, architect and builder, F. Sloat, 286 Kosciusko St.

Manhattan Ave., s e cor. Freeman St., four-st'y brick store and tenement, cement and gravel roof; cost, $6,800; owner, Joseph Geise, 312 Eckford St.; architects, Randal & Miller; builders, Port & Walker.

Tompkins Ave., e s, 91′ n Jefferson St., two-st'y brick dwell., tin roof; cost, $4,800; owner and builder, Jas. W. Stewart, cor. Quincy St. and Tompkins Ave.; architect, I. D. Reynolds.

ALTERATIONS. — *West St.*, s e cor. Kent St., add a story to two wings; cost, about $4,000; owner, Eberhard Faber, 719 Broadway, New York; architect, Wm. T. Hallett; builder, not selected.

Chicago.

RESTAURANT-BUILDING. — F. L. Charnley, architect, has completed plans for four-st'y structure, 45′ x 190′, of brick, iron and terra-cotta, on Adams St., between Clark and Dearborn Sts.; will be occupied as a restaurant by the owner, H. M. Kinsley; cost, furnished, $250,000.

BUILDING PERMITS. —Wm. Lange, two-st'y dwell., 24 Bauman St., cost, $3,000.

M. Kaufman, 2 two-st'y dwells., 551 Hurlbut St.; cost, $10,000; architect, Geo. Spohr; builder, Geo. L. Frank.

H. Corinth, 2 three-st'y stores and dwells., 531 and 533 West Madison St.; architect, L. B. Dixon; builder, J. Phillips.

Mrs. M. Eichenberg, three-st'y flats, 181 Huron St.; cost, $4,500.

F. W. Koerps, two-st'y dwell., 3223 Wentworth Ave.; cost, $4,000.

H. Scheplock, three-st'y store and flats, 150 Osgood St.; cost, $3,500.

J. S. Kirk & Co., six-st'y warehouse, 340 North Water St.; cost, $25,000.

L. Rank, two-st'y flats, 178 Ambrose St.; cost, $3,000; architect, A. Bessler.

J. F. Gubbins, two-st'y dwell., 224 Laflin St.; cost, $2,500.

C. S. Bowl, five-st'y warehouse, 245 and 247 Kinzie St.; cost, $15,000; architect, L. B. Dixon; builders, Angus & Gindele.

O. B. Taft, basement, 3014 Michigan Ave.; cost, $5,000.

J. A. Larson, three-st'y flats, 273 North Franklin St.; cost, $6,000; architect, J. Otter; builder, J. A. Larson.

N. P. Chidester, two-st'y dwell., 434 West Congress St.; cost, $3,500; architect, W. H. Drake.

M. Callahan, two-st'y dwell., 84 Flournoy St.; cost, $3,000.

Carden & Crowley, two-st'y dwell., 797 Taylor St.; cost, $4,500; architect, P. W. Ruehl.

Mrs. J. Derlin, two-st'y dwell., 2741 Archer Ave.; cost, $5,000; architect, J. Huber.

W. J. Leadbeater, 2 two-st'y dwells., 361 and 363 West Jackson St.; cost, $11,000.

P. Wilkin, two-st'y dwell., 259 West Division St.; cost, $3,000.

T. Wilson, two-st'y dwell., 12 Campbell Ave.; cost, $2,800; architect, Hancock.

C. Eichenold, two-st'y dwell., 3836 Dearborn St.; cost, $3,700.

New York.

CHURCH. — For the Reformed Dutch Church, of Harlem, a church, chapel and parsonage, to cost $80,000, is to be built on the n w cor. of One Hundred and Twenty-third St. and the Sixth Ave. Boulevard, from plans of Mr. J. R. Thomas.

SCHOOLHOUSE. — For the St. Joseph Roman Catholic Church, on Grove St., a fire-proof schoolhouse, to cost $120,000, is to be built from plans of Mr. Arthur Crooks.

STABLES. — A depot and stables, to cover an area of 33,000 square feet, is to be built for the Forty-second Street, Manhattanville & St. Nicholas Ave. Railroad Company, on One Hundred and Twenty-ninth and One Hundred and Thirtieth Sts., Manhattan Street and Twelfth Ave., from plans of Messrs. Thayer & Robinson.

STORE. — For the Misses Major, a five st'y iron-front brick building is to be built at No. 438 Broome St., at a cost of $45,000, from plans of Mr. Edward Kilpatrick.

BUILDING PERMITS. — *Bayard St., No.* 9, five-st'y brick store and dwell., tin roof; cost, $9,000; owner, Betsy Rubin, on premises; architect, Chas. Rents.

Canal St., No. 368, five-st'y brick store, gravel roof; cost, $18,000; owner, J. A. Roosevelt, 32 Pine St.; architect, Stephen D. Hatch; builders, M. Eidlitz & Son and A. G. Bogert & Bro.

Lafayette Pl., n e cor. Fourth St., seven-st'y brick factory, asphalt roof; cost, $200,000; owners, Roswell Smith and Theo. L. De Vinne, 54 East Fifty-fourth St.; architects, Babb, Cook & Willard.

West St., No. 259, rear, three-st'y brick tenement, tin roof; cost, $3,000; owner, Samuel Carey, 335 West Fifty-fourth St., trustee for Elizabeth Bentinck; architect, M. C. Merritt.

West Eleventh St., No. 283, five-st'y brick tenement, tin roof; owner, James A. Hayden, 80 Madison Ave.; architects, Hubert Pirsson & Co.

Greenwich St., No. 328, six-st'y brick store, tin roof; owner, Diederick Fink, 106 West Washington Pl.; architect, J. W. Cole.

Hall Pl., No. 1, n e cor. Sixth St., five-st'y brick store and tenement, tin roof; cost, $12,000; owner, Caroline Bosch, 223 Sixth St.; architect, J. Boekell.

Thirty-seventh St., s s, 225′ e Eleventh Ave., 2 five-st'y brick tenements, tin roofs; cost, $12,000 each; owner, Wm. Niebuhr, 350 East Seventy-seventh St.; architect, Wm. F. Niebuhr; builders, Wm. & Wm. H. Niebuhr.

West Forty-fifth St., No. 414, three-st'y brick stable and dwell., tin roof; cost, $8,000; owner, W. W. Wall, 233 West Forty-fifth St.; architects, De Lemos & Cordes.

Fifty-seventh St., n s, 225′ e Seventh Ave., 2 four-st'y brick dwells., tin roofs; cost, $23,000 and $25,000; owner, Ashley A. Vantine, 877 Broadway; architects, D. & J. Jardine.

Fifty-seventh St., n s, 226′ 6″ e Seventh Ave., four-st'y brick dwell., tin roof; cost, $22,000; owner and architects, same as last.

West Twenty-eighth St., Nos. 423–427, seven-st'y brick piano-factory, tin roof; cost, about $40,000; owner, C. S. Fischer, 152 West Fifty-eighth St.; architect, W. B. Tubby.

West Forty-fifth St., No. 513, four-st'y brick tenement, tin roof; cost, $9,500; owner, Jacob Schmidlapp, 441 East One Hundred and Twentieth St.; architect, C. F. Ridder, Jr.

West Twenty-fourth St., No. 518, one-st'y brick shop, gravel roof; cost, $3,000; owner, Benjamin Moore, by J. Wells, attorney, 191 Ninth Ave.; architect, J. B. Franklin; builder, J. D. Miner.

Ninth Ave, n w cor. Thirty-eighth St., 2 five-st'y brick stores and tenements and one extension, tin roof; cost, $14,000 and $16,000; owner, Andrew Ewald, 432 Fifty-first St.; architect, J. M. Forster.

Third Ave., n e cor. One Hundred and First St., 4 five-st'y brick tenements and stores, tin roofs; cost, total, $64,000; owner, Michael Duffy, 156 East One Hundred and Second St.; architect, Andrew Spence.

East Sixty-fourth St., No. 227, three-st'y brick stable and dwells., tin roof; cost, $8,000; owners, Bloomingdale Bros., Third Ave., cor. Fifty-sixth St.; architect, A. Wagner.

First Ave., n e cor. Eightieth St., 2 five-st'y brick stores and tenements, tin roofs; cost, corner, $15,000, other $10,000; owner, New York Protestant Episcopal School Society, 1517 Broadway; architect, John Sexton; builders, Van Dolsen & Arnott and L. Williams.

Eightieth St., n s, 54′ e First Ave., 2 five-st'y brick tenements, tin roofs; cost, $10,000 and $13,000; owner, architect and builder, same as last.

Eighty-third St., s s, 275′ e Tenth Ave., two-st'y brick stable, tin roof; cost, $10,000; owner, Margaret Deeves, 243 East Thirteenth St.; architect and builder, Richard Deeves.

Second Ave., s e cor. One Hundred and Twenty-sixth St., 4 five-st'y brown-stone tenements, tin roofs; cost, total, $64,000; owner, John Van Dolson, 125 East Eighty-third St.; architect, A. Spence.

One Hundred and Thirty-fifth St., s s, 100′ e Eighth Ave., one-st'y brick skating-rink, tin roof; owner, Edw. H. M. Just, 35 Great Jones St.; architect, M. C. Merritt.

One Hundred and Twenty-ninth St., s s, 200′ w Seventh Ave., 6 three-st'y brown-stone dwells., tin roofs; cost, each, $10,000 and upwards; owner, Mattie A. Cockburn; architect and builder, E. H. Cockburn.

One Hundred and Fifty-seventh St., s s, 100′ e Tenth Ave., three-st'y frame dwell., tin and shingle roof; cost, $4,000; owner, Asbury Lester, 240 West One Hundred and Twenty-fourth St.; architect, H. Fouchaux.

Kingsbridge Road, n e cor. Central Ave., two-st'y and attic frame dwell., tin roof; cost, $12,000; owner, Nettie Lynch, 558 Lexington Ave.; architect, C. Abbott French.

Fulton Ave., Nos. 1346 *and* 1348, near One Hundred and Sixty-eighth St., 2 two-st'y frame dwells., tin roofs; total cost, $7,000; owner, Stephen Moser, 136 West Fifty-second St.; architect, J. Kastner.

ALTERATIONS. — *Fifty-fourth St., No.* 407, three-st'y brick extension, tin roof; cost, $3,000; owner, Henry Elias, 403 East Fifty-fourth St.; builders, J. & L. Weber.

West Fifty-eighth St., Nos. 408–416, internal alterations; cost, $10,000; owner, Jacob F. Stier, Brooklyn; architects, Gilbert & Thompson; builder, C. W. H. Elting.

Third Ave., n e cor. Forty-third St., five-st'y brick extension, tin roof; cost, $10,000; owner, B. T. Kearns, 308 East Eighteenth St.; architect, J. A. Remer; builders, Thos. Cockerill and John Rueger.

Park Ave., s w cor. Fifty-seventh St., four-st'y brick extension for elevator-shaft; cost, $3,500; owner, Chas. Graef, 4 West Forty-eighth St.; architect, Stephen D. Hatch; builders, Crane Bros. and Jas. Elgar.

Philadelphia.

BUILDING PERMITS. — *Woodland Ave.*, w of Fiftieth St., one-st'y chapel, 26′ x 70′; also, one-st'y addition to chapel, *Poplar St.*, w of Twenty-seventh St., 15′ x 30′; Frank W. Tweed, contractor.

Columbia Ave., e of Fifteenth St., three-st'y store and dwell., 18′ x 60′; Chas. P. Griel, contractor.

Eighth St., w s, below Huntingdon St., 9 two-st'y dwells., 15′ x 47′; John Loughran, owner.

North Front St., No. 2127, two-st'y brick building, 13′ x 32′; Valentine Lint, contractor.

Albert St., w of Twelfth St., 2 three-st'y dwells, 15′ x 24′; Amos Supplee, owner.

Roxborough Ave., above Ridge Ave., two-st'y dwell., 20′ x 26′; J. B. Muir, owner.

Marshall St., above Girard Ave., three-st'y dwell., 22′ x 24′; Joseph G. Huber, contractor.

Twelfth St., above Susquehanna Ave., three-st'y dwell. and stable, 17′ x 41′, and 17′ x 28′; R. McClellan, contractor.

Ingersoll St., w of Twenty-second St., three-st'y dwell., 16′ x 41′; Harbach & Auchter, contractors.

Moore St., e of Third St., 3 two-st'y dwells., 15′ x 42′; David France, owner.

Columbia Ave., No. 1424, three-st'y store and dwell., 20′ x 76′; Wm. E. Beetern, owner.

Twenty-sixth St., above Oxford St., 6 two-st'y dwells., 16′ x 46′; O. A. Guenthner, contractor.

Oxford St., No. 2629, two-st'y dwell., 17′ x 42′; Wm. Chambers, owner.

Germantown Road and Huntingdon St., n e cor., three-st'y store and dwell., 20′ x 54′; Francis McGill, owner.

Emerald St., bet. Alleghany Ave. and Madison St., 2 two-st'y dwells., 14′ x 42′; Francis Deitrich, contractor.

St. Louis.

BUILDING PERMITS. — Eighty permits have been issued since our last report, fourteen of which are for unimportant frame houses. Of the rest those worth $2,500 and over are as follows: —

Wm. Gillespie, 3 adjacent two-st'y stores and tenements; cost, $5,000; Eden Reed, contractor.

G. Spengeman, two-st'y store and dwell.; cost, $3,000; G. Spengeman, contractor.

Fred. Hartmann, two-st'y double dwell.; cost, $6,000; Fred. Hartmann, contractor.

Jno. H. Marische, two-st'y store and dwell.; cost, $5,5 0; Rothe & Rattermann, contractors.

G. W. Clemens, two-st'y brick dwell.; cost, $9,400; T. B. Annon, architect; W. D. Bartoe, contractor.

J. H. Kaeser, 5 adjacent two-st'y dwells.; cost, $18,000; E. C. Jansten, architect; Paulus & Weidemuller, contractors.

J. Dunlap, two-st'y brick dwell.; cost, $3,500; J. Dunlap, contractor.

G. Rich, 2 adjacent two-st'y dwells.; cost, $5,000; Herman & Schulter, contractors.

F. Hueleman, three-st'y store and dwell.; cost, $5,800; Wm. Kerkenhoff, contractor.

J. Hacker, two-st'y brick tenement; cost, $3,000; J. Hacker, contractor.

G. Keisler, three-st'y brick tenement; cost, $3,600; H. Stevens, contractor.

W. C. Wrisberg, 2 adjacent two-st'y tenements; cost, $2,500; contract sublet.

S. Schultz, two-st'y double brick tenement; cost, $3,000; H. Sudhalter, contractor.

Wm. P. Hourigan, two-st'y brick dwell.; cost, $4,300; W. G. Gaines, architect; T. J. Kelly & Co., contractors.

J. Temple, 4 adjacent two-st'y tenements; cost, $5,400; G. Barnett & Son, architects; M. Kirkwood, contractor.

W. Leo, two-st'y brick dwell.; cost, $3,500; J. Schuster, contractor.

J. Brown, two-st'y brick dwell.; cost, $2,500; Pat. Smith, contractor.

J. W. Clemens, 3 adjacent two-st'y dwells.; cost, $20,000; T. B. Annan, architect; Francisco & Fornum, contractors.

H. Parsons, 2 adjacent two-st'y tenements; cost, $8,000; Kothe & Rattermann, contractors.

T. Higgins, 3 adjacent two-st'y dwells.; cost, $4,000; Furlong, architect; Thos. C. Higgins, contractor.

M. E. Kealmeyer, two-st'y brick dwell.; cost, $3,000; J. Fitzgibbons, contractor.

Miss Margaret Creane, 2 adjacent two-st'y dwells.; cost, $4,430; A. Fenner, contractor.

August Schueddeg, two-st'y store and tenement; cost, $8,500; A. Wieden, contractor.

R. Schegel, two-st'y store and tenement; cost, $3,225; J. Gamache, contractor.

E. F. Hummat, two-st'y brick dwell.; cost, $3,500; M. B. Scanlon, contractor.

G. P. Schaefer, two-st'y brick dwell.; cost, $3,000; J. C. Bockmeier, contractor.

St. Paul, Minn.

STABLE.—Two-st'y brick livery-stable, s s of Sixth St., between Jackson and Sibley Sts.; cost, $9,000; owner, Mr. J. T. Alexander.

BUILDING PERMITS.— Brick veneer store, e s of Dakota St., between Augusta and Morton Sts.; cost, $2,000; owner, John H. Hein.

Alterations to Windsor Hotel; cost, $2,500; owner, John Summers.

Two-st'y frame dwell., e s of Payne Ave., between Wells and Whitall Sts.; cost, $1,500; owner, Nels Olson.

Two-st'y frame double dwell., e s of Burr St., between York and Case Sts.; cost, $2,400; owner, Howard Hill.

Two-st'y frame dwell., n s of Martin St., between Farrington and Elfett Sts.; cost, $2,450; owner, Charles Wick.

Three-st'y pork-packing house, on Eighth St., between Main and Cedar Sts.; cost, $10,000.

Three-st'y stores and dwell., n of Third St., cor. of Oak St.; cost, $13,000; owner, Greenleaf Clark.

General Notes.

LAS VEGAS HOT SPRINGS, N. M.—J. A. McGringle of Leavenworth, Kans., has the contract for the proposed Montezuma Hotel, which is to be built of red sandstone, rock face, four-st'y; Burnham & Root, architects, Chicago; owners, A. T. S. Railroad Co.

MINNEAPOLIS, MINN. — L. M. Lane, two-st'y frame tenement, 3 houses, cor. Third Ave. and Sixth St.; cost, $4,000.

C. M. Loring, alteration of first story and basement of wooden hotel-building to brick, cor. Washington and South Sixth Aves.; cost, $12,000.

J. H. Thompson, double three-st'y brick veneered dwell., s s Linden Ave., between North Fifteenth and Sixteenth Sts.; cost, $8,000.

G. W. Bigley, four-st'y brick store and flats, 126 South Fourth St.; cost, $10,000.

PASSAIC, N. J.—The Board of Education have adopted the new Hackensack school-house as a model for the new school to be erected in Passaic. It will cost about $20,000.

SUPERIOR, MINN. — Church; cost, $15,000; architect, A. M. Radcliff.

COMPETITION.

TORONTO COURT-HOUSE.

[At Toronto, Ont.]

CITY CLERK'S OFFICE, TORONTO, ONT., March 4, 1885.

CHANGE OF TIME AND CONDITIONS.

Notice is hereby given that the following amendments have been made to the Instructions to Architects previously issued, viz.: —

(1) That the clause providing for the building being erected in Canadian material be struck out.

(2) That all designs for which premiums are awarded shall be and remain the property of the designer, instead of becoming the property of the city, except the one which is accepted for the erection of the building.

(3) That no prize be awarded to any plan the carrying out of which will exceed $200,000.

(4) That the time for the reception of plans be extended **until the 23d of April, 1885.**

JOHN BLEVINS, City Clerk.

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CITY-HALL.

[At Richmond, Va.]

February 16, 1885.

Proposals are invited **until June 1st, 1885,** for furnishing designs for a city-hall upon which premiums will be paid as follows: —

For first best design, $700.

For second best design, $300.

The Committee on Grounds and Buildings of the City Council reserves the right to reject any and all designs.

For information address the undersigned.

487 W. E. CUTSHAW, City Engineer.

LADIES' COLLEGE.

[At Montreal, Can.]

22 ST. JOHN STREET, MONTREAL, February 20, 1885.

The Trustees of the Trafalgar Institute, being desirous of erecting a building for the purposes of a ladies' college, invite architects to submit plans and estimates for the same.

Full particulars as to site, etc., can be had by applying to the undersigned.

Plans, etc., to be submitted **not later than 1st of April next.**

ALEX. F. RIDDELL, Secretary Trafalgar Institute.

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PROPOSALS.

IRON GATES.

[At Boston, Mass.]

Sealed proposals will be received at the City Architect's office, City-Hall, **until Saturday, March 21st, at 12 M.,** for iron gate for the new head-house, East Boston South Ferry, Boston side.

Proposals from non-residents will not be entertained.

The right reserved to reject any or all proposals received.

For plans, specifications, etc., apply at City Architect's office.

Proposals to be addressed to JAMES SMITH, Chairman Committee Directors East Boston Ferries.

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BRICK, CEMENT, ETC.

[N. Y. Harbor.]

DEPOT QUARTERMASTER'S OFFICE, DAVID'S ISLAND, NEW YORK HARBOR, March 5, 1885.

Sealed proposals in triplicate, subject to the usual conditions, will be received at this office **until 11 o'clock, A.M., on Wednesday, March 18, 1885,** at which time and place they will be opened in presence of bidders, for furnishing and delivering at this place:—

Granite caps, iron tie rods, bricks and cement.

The Government reserves the right to reject any, or all proposals.

Preference given to articles of domestic production and manufacture, conditions of price and quality being equal, and such preference given to articles of American production and manufacture produced on the Pacific coast to the extent of the consumption required by the public service there.

Blanks and further information furnished by this office on application.

GEO. H. COOK, Capt. and Asst. Quartermaster.

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SEWER MATERIALS.

[At Providence, R. I.]

BOARD OF PUBLIC WORKS, OFFICE CITY-HALL, PROVIDENCE, R. I., March 5, 1885.

Sealed proposals will be received at this office **until Saturday, the 21st day of March, 1885, at 11 o'clock, A. M.,** for furnishing the following-named materials for sewer-work, viz.:

PIPES.

90 feet of fifteen-inch by twelve-inch branch-pipes.
120 feet of fifteen-inch by six-inch branch-pipes.
750 feet of fifteen-inch straight-pipes.
1050 feet of twelve-inch by six-inch branch-pipes.
6000 feet of twelve-inch straight-pipes.
400 feet of eight-inch straight-pipes.
100 pieces double six-inch branch-pipes.
30 fifteen-inch bevel connections.
60 twelve-inch bevel connections.
400 long six-inch bevel connections.
2000 six-inch covers.

INVERT BLOCKS.

1300 eight-inch invert blocks.

FLAG STONES.

100 flag stones for catch basins, five feet by five feet, four inches thick.

CATCH-BASIN STONES.

58 sets side catch-basin stones, one-half right and one-half left.

22 coping stones.

BRICKS.

250,000 hard body bricks.

CEMENT.

The cement required by Sewer Department for the season of 1885.

CHARACTER OF MATERIALS.

The twelve and fifteen-inch pipes are to be in lengths of three feet, of good clay, salt-glazed, uniform in texture and thoroughly burned; eighty per cent of the quantity to be less than one-fourth inch out of round, and less than three-eighths of an inch out of straight; no pipe is to exceed one-half of an inch out of straight or out of round, and in no case is any pipe to be out of round on different diameters at different ends. The glazing and the thickness of pipes to be satisfactory.

The catch-basin, coping and gutter stones are to be of sound, hard granite, and cut according to plans.

The invert blocks are to be salt-glazed clay, of the pattern designed for these works.

The cement to be fresh-burned, well ground, free from lumps, and to stand a tensile strain of not less than sixty pounds per square inch.

The bricks are to be hard-burned, whole and sound, of true form, and with only a small percentage of black ends. Two samples of the bricks offered are to be furnished with the bid, one to be a fair sample of the average quality of the bricks to be delivered, and the other a sample of the poorest bricks that will be accepted.

All materials furnished to be subject to the inspection and approval of the City Engineer.

DELIVERY.

The materials, except catch-basin stones and cement, are to be delivered on wharf occupied by the city, foot of Point St. The catch-basin stones may be delivered either on the wharf occupied by the city, or on cars at the city yard.

The delivery of all materials is to begin on or before May 1, 1885, and to be completed on or before August 1, 1885, except the cement, which is to be delivered on the street as the work in progress requires.

A bond satisfactory to the Board for a sum equal to about one-tenth of the estimated amount of the contract, as liquidated damages for failure to execute the contract within ten days, if awarded, must accompany each proposal.

A bond satisfactory to the Board for a sum equal to about one-third of the estimated amount of the contract, conditioned upon the faithful performance of the contract, will be required of the successful bidder.

The Board reserve the right to reject any or all proposals.

CHAS. E. CARPENTER, CLINTON D. SELLEW, } Board of Public Works.

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PROPOSALS.

EXTENSION OF TIME.

OFFICE OF THE LIGHT-HOUSE BOARD, TREASURY DEPARTMENT, WASHINGTON, D. C., March 5, 1885.

THE date of opening the bids for the metal-work of the Rebecca Shoal Light-House is hereby changed to **Saturday, March 21, 1885,** instead of March 11, as heretofore advertised.

S. C. ROWAN, Vice-Admiral, U. S. N. Chairman.

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JAIL AND SHERIFF'S RESIDENCE.

[At Delhi, N. Y.]

DELHI, DELAWARE COUNTY, March 3, 1885.

Sealed proposals for the erection and completion of a jail and sheriff's residence at Delhi, Delaware Co., N. Y., will be received **until Tuesday, March 24, 1885, at 7 o'clock, P. M.,** by the undersigned Committee, at the office of Abram C. Crosby, in Delhi, aforesaid.

The plans, detail drawings and specifications for said building can be examined at said office, or a copy of the specifications will be furnished on application to either member of said Committee.

Proposals will be received as follows, namely: —

First, for the entire erection and completion of said jail and residence, including plumbing, cesspools, and everything mentioned and implied in said plans, detail drawings and specifications.

Second, for the erection and completion of the Sheriff's residence, in accordance with said plans, detail drawings and separate specifications therefor.

Third, for the erection and completion of the jail in accordance with said plans, detail drawings, and separate specifications therefor.

Fourth, for the complete plumbing of said residence and jail, excavating for cesspools and trenches for pipes, and furnishing material, in accordance with the plans, detail drawings and separate specifications therefor.

The bidder whose proposal shall be accepted for the construction of either the entire building, or for the residence, jail or plumbing separately, before entering into a contract therefor with said Committee, will be required to give a bond with sufficient surety or sureties for one-third the amount of his bid, conditioned for the faithful performance of his agreements in said contract. The name or names of his proposed surety or sureties must accompany his bid.

The Committee reserve the right to reject any or all bids.

ABRAM C. CROSBY, GEO. O. MEAD, J. M. DONNELLY, Building Committee.

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ELEVATORS.

[At Cincinnati, O.]

OFFICE OF SUPERVISING ARCHITECT, TREASURY DEPARTMENT, WASHINGTON, D. C., February 28, 1885.

Sealed proposals will be received at this office **until 2 P. M., on the 28th day of March, 1885,** for furnishing and erecting complete, in the custom-house and post-office building at Cincinnati, O., two hydraulic passenger-elevators, two mail-elevators, and one ash-lift, in accordance with drawings and specification, copies of which and any additional information may be had on application at this office or the office of the superintendent.

Bids must be accompanied by a certified check for $1,000, drawn to the order of the Secretary of the Treasury, as a guarantee that the bidder will enter into a contract, if his bid is accepted, and furnish a bond equal to the amount of the contract.

Bids received after the time of opening will not be considered.

M. E. BELL. Supervising Architect.

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EXCAVATING, CONCRETE FOUNDATIONS, BRICKWORK, ETC.

[At Shreveport, La.]

OFFICE OF SUPERVISING ARCHITECT, TREASURY DEPARTMENT, WASHINGTON, D. C., February 25, 1885.

Sealed proposals will be received at this office **until 2 P. M., on the 11th day of April, 1885,** for furnishing all labor and material required for the excavating, the concrete foundations, and the brick and stone work of basement and superstructure of the post-office, court-house, etc., building at Shreveport, La., in accordance with the drawings and specification, copies of which may be seen and any additional information obtained at this office or the office of the superintendent.

Bids must be accompanied by a certified check for $1,000, drawn to the order of the Secretary of the Treasury, as a guarantee that the bidder will enter into a contract if his bid is accepted, and furnish a bond equal to the amount of the contract.

Bids received after the time of opening will not be considered.

M. E. BELL, Supervising Architect.

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ELEVATORS.

[At Kansas City, Mo., Memphis, Tenn., and Montgomery, Ala.]

OFFICE OF SUPERVISING ARCHITECT, TREASURY DEPARTMENT, WASHINGTON, D. C., March 3, 1885.

Sealed proposals will be received at this office **until 2 P. M., on the 31st day of March, 1885,** for furnishing and erecting complete, a steam passenger elevator in the new public buildings in each of the *above-named cities,* in accordance with drawings and specification, copies of which and any additional information may be had at this office or the office of the superintendent at each building.

Bids must be accompanied by a certified check for $1,000, drawn to the order of the "Secretary of the Treasury," as a guaranty that the bidder will enter into a contract if his bid is accepted, and furnish a bond equal to the amount of the contract.

Bids received *after* the time of opening will *not* be considered.

M. E. BELL. Supervising Architect.

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